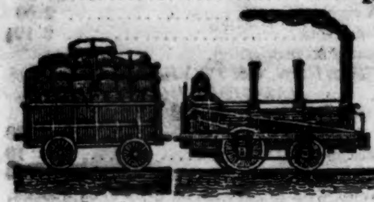
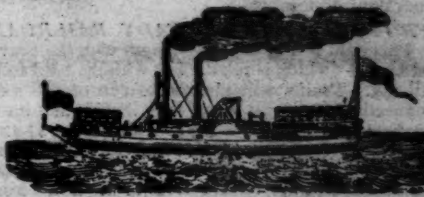
Medley of Mech Ads.

AMERICAN RAILROAD JOURNAL,

AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY AND MINES.





ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 105 CHESTNUT STREET, PHILADELPHIA, AT FIVE DOLLARS PER ANNUM.

SECOND QUARTO SERIES, VOL. III., No. 11.] SATURDAY, MARCH 13, 1847. [WHOLE No. 560, VOL. XX.

AMERICAN RAILROAD JOURNAL.
OFFICE AT THE FRANKLIN HOUSE,
105 Chestnut Street,
PHILADELPHIA, PA.

This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

TERMS.—Five Dollars a year, *in advance.*

RATES OF ADVERTISING.

One page per annum	$125 00
One column "	50 00
One square "	15 00
One page per month	20 00
One column "	8 00
One square "	2 50
One page, single insertion	8 00
One columnn " "	3 00
One square " "	1 00
Professional notices per annum.	5 00

BOSTON AND PROVIDENCE RAILroad. Passenger Notice. Summer Arrangement. On and after Monday, Sept. 28, 1846, the Passenger Trains will run as follows:

For New York—Night Line, via Stonington. Leaves Boston every day, but Sunday, at 5 p.m.

Accommodation Trains, leave Boston at 7½ a.m. and 3½ p.m., and Providence at 8 a.m. and 3½ p.m.

Dedham trains, leave Boston at 9 a.m.; 3 p.m., 5½ p.m., and 10½ p.m. Leave Dedham at 8 a.m. and 4½ and 9 p.m.

Stoughton trains, leave Boston at 11½ a.m. and 4·10 p.m. Leave Stoughton at 8 a.m. and 2½ p.m.

All baggage at the risk of the owners thereof.

31 1y W. RAYMOND LEE, *Sup't.*

BRANCH RAILROAD and STAGES CONnecting with the Boston and Providence Railroad.

Stages connect with the Accommodation trains at the Foxboro' Station, to and from Woonsocket. At the Seekonk Station, to and from Lonsdale, R. I. via Pawtucket. At the Sharon Station, to and from Walpole, Mass. And at Dedham Village Station, to and from Medford, via Medway, Mass. At Providence, to and from Bristol, via Warren, R. I.—Taunton, New Bedford and Fall River cars run in connection with the accommodation trains.

PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for

1847.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares.	Miles.	No. 1.		No. 2.
Between Phila. and Pottsville,	92	$3·50	and	$3·00
" " Reading,	58	2·25	and	1·90
" Pottsville "	34	1·40	and	1·20

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf

LEXINGTON AND OHIO RAILROAD. Trains leave Lexington for Frankfort daily, at 5 o'clock a.m., and 2 p.m.

Trains leave Frankfort for Lexington daily, at 8 o'clock a.m. and 2 p.m. Distance, 28 miles. Fare $1·25.

On Sunday but one train, 5 o'clock a.m. from Lexington, and 2 o'clock p.m. from Frankfort.

The winter arrangement (after 15th September to 15th March) is 6 o'clock a.m. from Lexington, and ma. 9. from Frankfort, other hours as above.

351y

BOSTON AND MAINE RAILROAD. Upper Route, to Portland and the East.

SPRING ARRANGEMENT,
March 1, 1847.

PORTLAND TRAINS.

Leave Boston at 7½ A.M. and 2½ P.M.
Leave Portland at 7½ A.M. and 3 P.M.

GREAT FALLS TRAIN.

Leave Boston at 4½ P.M.
Leave Great Falls at 6½ A.M.

HAVERHILL TRAINS.

Leave Boston at 11½ A.M. and 5·50 P.M.
Leave Haverhill at 6½ A.M. and 4 P.M.

READING TRAINS.

Leave Boston at 9 A.M. and 8 P.M.
Leave Reading at 6½ A.M. and 1½ P.M.

MEDFORD BRANCH TRAINS.

Leave Boston at 7½, 9 A.M., 2½, 5·50 P.M.
Leave Medford at 6½, 8 A.M., 1½, 5½ P.M.

The Depot in Boston is on Haymarket Square.

Passengers are not allowed to carry Baggage above $50 in value, and that *personal*, unless notice is given, and an extra amount paid, at the rate of the price of a Ticket for every $500 additional value.

1y31 CHAS. MINOT, *Super't.*

SUMMER ARRANGEMENT.—NEW YORK AND ERIE RAILROAD LINE, from April 1st until further notice, will run daily (Sundays excepted) between the city of New York and Middletown, Goshen, and intermediate places, as follows:

FOR PASSENGERS—
Leave New York at 7 A. M. and 4 P. M.
" Middletown at 6½ A. M. and 5½ P. M.

FARE REDUCED to $1 25 to Middletown—way in proportion. Breakfast, supper and berths can be had on the steamboat.

FOR FREIGHT—
Leave New York at 5 P. M.
" Middletown at 12 M.

The names of the consignee and of the station where to be left, must be distinctly marked upon each article shipped. Freight not received after 5 P. M. in New York.

Apply to J. F. Clarkson, agent, at office corner of Duane and West sts. H. C. SEYMOUR, Sup't.
March 25th, 1846.

Stages run daily from Middletown, on the arrival of the afternoon train, to Milford, Carbondale, Honesdale, Montrose, Towanda, Owego, and West; also to Monticello, Windsor, Binghamton, Ithaca, etc., etc. Agent on board. 13tf

NORWICH AND WORCESTER RAILRoad. Summer Arrangement, commencing Monday, April 6, 1846.

Accommodation Trains, daily, except Sunday. Leave Norwich, at 6 a.m., and 4½ p.m. Leave Worcester, at 10 a.m., and 4½ p.m.

☞ The morning Accommodation Trains from Norwich, and from Worcester, connect with the trains of the Boston, and Worcester and Western railroads each way.

The Evening Accommodation Train from Worcester connects with the 1½ p.m. train from Boston.

New York Train via Long Island Railroad:

Leave Allyn's Point for Boston, about 1 p.m., daily, except Sunday.

Leave Worcester for New York, about 10 a.m., stopping at Webster, Danielsonville, and Norwich.

New York Train via Steamboat—Leave Norwich for Boston, every morning, except Monday, on the arrival of the stamboat from New York, stopping at Norwich and Danielsonville.

Leave Worcester for New York, upon the arrival of the train from Boston, at about 4½ p.m., daily, except Sunday, stopping at Webster, Danielsonville and Norwich.

Freight Trains daily each way, except Sunday.—Special contracts will be made for cargoes, or large quanties of freight, on application to the superintendent.

☞ *Fares are Less when paid for Tickets than when paid in the Cars.* ☜

32 1y J. W. STOWELL, Sup't.

TROY RAILROADS.—IMPORTANT NOTICE.

—Troy and Greenbush Railroad, forming a continuous track from Boston to Buffalo and Saratoga Springs. This road is new, and laid with the heaviest iron H rail. Trains will always be run on this road connecting at Greenbush each way with the trains to and from *Boston* and intermediate places, leaving Greenbush daily at 1½ p.m. and 6 p.m., or on arrival of the trains from Boston; leave Troy at 7¾ a.m. and 4¼ p.m., or to connect with trains to *Boston*

Trains also run hourly on this road between Troy and Albany. Running time between Greenbush and Troy, 15 minutes.

TROY AND SCHENECTADY RAILROAD.

This road is laid its entire length with the heaviest H rail- which is not the fact with the road from Albany. Trains will always be run on this road connecting each way, to and from Buffalo and intermediate places. Leave Troy for Buffalo at 7¼ a.m. and 1 p.m. and 6¼ p.m., or to connect with the trains for the west; leave Schenectady at 2½ a.m., 8½ a.m., 1 p.m. and 3¾ p.m., or on arrival of the trains from Buffalo and intermediate places.

TROY AND SARATOGA RAILROAD.

THE ONLY DIRECT ROUTE.

No change of passenger, baggage or other cars on this route. Cars leave Troy for Ballston, Saratoga Springs, Lake George and White Hall at 7¾ a.m., (arriving one hour in advance of the train from Albany,) and at 3½ p.m. Returning, leave Saratoga at 9 a.m. and 3½ p.m., (reaching Troy in time for the evening boats to New York.) Cars also leave Troy for the Burrough at 3½ p.m. and 7 p.m., connecting with packet boats for the north. This takes passengers from New York and Boston to Montreal in 44 hours.

N.B. Travellers will find the routes through Troy most convenient and economical, and as expeditious as any other. The steamboats to and from New York land within a few steps of the railroad office, and passengers are taken up and landed by the different railroad lines at the doors of principal hotels, thus saving all necessity for, and annoyance from, hack drivers, cabmen, runners, etc.

Aug 3, 1846. 1y 32

BALTIMORE AND OHIO RAILROAD.

MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7¼ and Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry — with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. · Fare between those points $7, and 4 cents per mile for less distances. Fare through to Wheeling $11 and time about 36 hours, to Pittsburgh $10, and time about 32 hours. Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12 Extra train daily except Sundays from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M. and 5 P. M. and 12 at night from Baltimore and at 6 A. M. and 5½ P. M from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13y1

MANUFACTURE OF PATENT WIRE

Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by

JOHN A. ROEBLING, *Civil Engineer*,
Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railrord, has now run 4 seasons, and is still in good condition. 2v191y

---

NEW RAILROAD ROUTE FROM BUFFALO TO CINCINNATI.

Passengers destined for Columbus and Cincinnati, O., Louisville, Ky., St. Louis, Mo., Memphis, Tenn., Vicksburg, Natches, New Orleans, and all intermediate ports, will find a new, and the most expeditious and comfortable Route, by taking Steamboats at Buffalo, landing at Sandusky City, Ohio, distance.................................230 miles.

From thence by Cars, over the Mansfield Railroad which is new and just opened [laid with heavy Iron,] to Mansfield, distance..............................	56 "
Thence by Stage via Columbus to Xenia over gravel and Macadamized Road, (the best in the state,) in new coaches, distance..............................	88 "
Thence, over the Little Miami Railroad, from Xenia to Cincinnati, distance....	65 "

TIME.

From Buffalo to Sandusky..............	24 hours.
Leave Sandusky 5 a.m. to Columbus....	14 "
From Columbus to Cincinnati..........	15 "

Or say 30 hours from Sandusky to Cincinnati over this route, including delays.

FARE.

From Buffalo to Sandusky, Cabin............	$6 00
" " " " Steerage.........	3 00
" Sandusky to Columbus................	4 50
" " *through* to Cincinnati.......	8 00

Passengers should not omit to pay their fare *through* from Sandusky City to Cincinnati and take receipts availing themselves of the benefit of a contract existing between the said Railroad and Stage Co's, securing 121 miles travel by good Railroad and 88 miles by Stage, in crossing from Lake Erie to the Ohio river, in the space of 30 hours.

Passengers destined for St. Louis, or any point below on the Mississippi, will save by taking this route, from 4 to 6 days time and travel, and nearly half the expense, over the Chicago and Peoria route to the above places.

Fare by this route, although the cheapest, will in a short time be reduced, Railroad lengthened, and speed increased.

B. HIGGINSON, *Sup't, etc.*
M. & S. C. R. R. Co.
Sandusky City, Ohio.

NEW YORK & HARLEM RAILROAD CO.—Winter Arrangement.

On and after Monday, November 23, 1846, the cars will run as follows:

Leave 27th street for 42d street, Deaf and Dumb Institute, Yorkville, Harlem Morrianna, and Williams' Bridge, at 7 o'clock a.m. From City Hall for above named places, 2 p.m. [freight train,] 2 30 p.m. 5 p.m. to Morrisiania only.

Leave City Hall for Harlem, Morrisiania, Fordham and Williams' Bridge, at 7 45 a.m., and 10 45 a.m.; 1 15 p.m., 2 p.m. [freight train], 2 30 p.m. and 3 45 p.m.

Leave City Hall for Hunt's Bridge, Bronx, Tuckahoe, Hart's Corners White Plains, Davis' Brook, Unionville and Pleasantville, [Pleasantville 4 miles from Sing Sing,] 7 45 and 10 45 a.m.; 1 15 p.m., 2 p.m. [freight train], and 3 45 p.m.

RETURNING.

Leave Pleasantville, at 8, 10, [freight train], and 11, a.m.; 1 30, and 4, p.m.

Leave White Plains, at 8 12, 10 30, [freight train] and 11 20 a.m.,; 1 50, and 4 20, p.m.

Leave Tuckahoe, 8 35, 10 55, [freight train,] and 11 35, a.m.; 2 05, and 4 35, p.m.

Leave Williams' Bridge at 7 45, 8 50 and 11 50 a. m.; 2 20, 4, and 4 50 p.m.

Leave Morrisiania 8 and 9 05 a.m.; 12 05, 2 35, 4 20, 5 05 and 6 p.m.

Leave Yorkville, at 8 12 a.m.; 4 35 and 6 15 p.m.

SUNDAY ARRANGEMENTS.

Leave City Hall for Pleasantville and intermediate places, at 7 45 a.m.; 1 15 and 3 p.m.

Leave Pleasantville for City Hall, at 8 a.m.; 11, and 3 15 p.m.

Leave City Hall for Williams' Bridge and intermediate places, 10 45 a.m.; 2 30 p.m.

Leave Williams' Bridge for City Hall, at 8 50 and 11 50 a.m.; 1, 3 45 and 4 05 p.m. 1y49

BALTIMORE AND SUSQUEHANNA

Railroad.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger trains run daily, except Sunday, as follows:

Leaves Baltimore at..........	9 a.m. and 3½	p.m.
Arrives at..................	9 a.m. and 6½	p.m.
Leaves York at..............	5 a.m. and 3	p.m.
Arrives at..................	12½ p.m. and 8	p.m.
Leaves York for Columbia at..	1½ p.m. and 8	a.m.
Leaves Columbia for York at..	8 a.m. and 2	p.m.

FARE.

Fare to York..............................	$1 50
" Wrightsville........................	2 00
" Columbia............................	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg....................................	$9
Or via Lancaster by railroad................	10
Through tickets to Harrisburg or Gettysburg..	3

In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at.............5½ p.m.

Returning, leaves Owing's Mills at........7 a.m.

D. C. H. BORDLEY, *Sup't.*

31 1y Ticket Office, 63 North st.

CENTRAL RAILROAD-FROM SAVANNAH TO MACON.

Distance 190 miles.

This Road is open for the transportation of Passengers and Freight. Rates of Passage, $8 00. Freight—

On weight goods generally...	50 cts. per hundred.
On measurement goods	13 cts. per cubic ft.
On brls. wet (except molasses and oil).................	$1 50 per barrel.
On brls. dry (except lime)...	80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unboxed machinery...............	40 cts. per hundred.
On hhds. and pipes of liquor, not over 120 gallons......	$5 00 per hhd.
On molasses and oil........	$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE,
.y40 Gen'l. Sup't. Transportation.

THE BEST RAILROAD ROUTE TO THE LAKE AND BUFFALO, FROM CINCINNATI.

Take Cars to Xenia, 65 miles; take Stage to Mansfield, 88 miles; thence by Cars to Sandusky, 56 miles to the Lake; thence Steamboat to Buffalo, 230 miles.

Fare from Cincinnati to Sandusky...........	$8 00
" " Sandusky to Buffalo, Cabin......	6 00
" " " " " Steerage....	4 50

Fare by this route, although the cheapest across the state, will be reduced in a short time, railroad lengthened, and speed increased.

Leave Cincinnati in the morning, arrive at Columbus at night.

Leave Columbus in the morning, arrive at Sandusky same day.

Leave Sandusky, by Boat, in the morning, arrive at Buffalo next morning in time for the Cars north and east for Niagara Falls, Canada, Saratoga Springs, Troy, Albany, Boston, New York, Washington, or Philadelphia.

Passengers should not omit to pay their fare through from Cincinnati to Sandusky, or from Columbus to Sandusky via Mansfield; as this route is the only one that secures 56 miles [this road is run over in 2h. 50m.,] most railroad which is new, and is the shortest, cheapest and most expeditious across the state.

Fares on the New York railroads are about to be reduced.

B. HIGGINS, *Sup't, etc.*
Saudusky, Ohio. *M. & S. C. R. R. Co.*

THE SUBSCRIBER IS PREPARED TO

execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, etc., etc.

PETER COOPER 17 Burling Slip.
1y10 New York.

CENTRAL AND MACON AND WESTERN Railroads, Ga.—These Roads with the Western and Atlantic Railroad of the State of Georgia, form a continuous line from Savannah to Oothcaloga, Ga., of 371 miles, viz:

	Miles.
Savannah to Macon—Central Railroad	190
Macon to Atlanta—Macon and Western	101
Atlanta to Oothcaloga—Western and Atlaniic	80

Goods will be carried from Savannah to Atlanta and Oothcaloga, at the following rates, viz:

	To Atlanta.	To Oothcaloga.
On Weight Goods—Sugar, Coffee, Liquor, Bagging, Rope, Butter, Cheese, Tobacco, Leather, Hides, Cotton Yarns, Copper, Tin, Bar & Sheet Iron, Hollow Ware & Castings	$0 50	$0 75
Flour, Rice, Bacon in Casks or boxes, Pork, Beef, Fish, Lard, Tallow, Beeswax, Mill Gearing, Pig Iron and Grind Stones	0 50	0 62½
On Measurement Goods—Boxes of Hats, Bonnets and Furniture, per cubic foot	0 20	0 26
Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per cubic foot	0 20	pr. 100lbs. 35
Crockery, per cubic foot	0 15	“ “ 35
Molasses and Oil, per hhd., (smaller casks in proportion)	9 00	12 50
Ploughs, (large,) Cultivators, Corn Shellers, and Straw Cutters, each	1 25	1 50
Ploughs, (small,) and Wheelbarrows	0 80	1 05
Salt, per Liverpool Sack	0 70	0 95

Passage—Savannah to Atlanta, $10; Children, under 12 years of age, half price,
Savannah to Macon, $7.

☞ Goods consigned to the subscriber will be forwarded free of Commissions.

☞ Freight may be paid at Savannah, Atlanta or Oothcaloga.

F. WINTER, *Forwarding Agent, C. R. R.*
Savannah, Aug. 15th, 1846. 1y34

GREAT SOUTHERN MAIL LINE! VIA Washington city, Richmond, Petersburg, Weldon and Charleston, S. C., direct to New Orleans. The only Line which carries the Great Southern Mail, and Twenty-four Hours in advance of Bay Line, leaving Baltimore same day.

Passengers leaving New York at 4½ P.M., Philadelphia at 10 P.M., and Baltimore at 6½ A.M., proceed without delay at any point, by this line, reaching Richmond in *eleven*, Petersburg in *thirteen and a half hours*, and Charleston, S. C., in *two days* from Baltimore.

Fare from Baltimore to Charleston	$21 00
“ “ “ Richmond	6 60

For Tickets, or further information, apply at the *Southern Ticket Office*, adjoining the *Washington Railroad Office*, Pratt street, Baltimore, to
1v14 STOCTON & FALLS, Agents.

RAILROAD SCALES.—THE ATTENTION of Railroad Companies is particularly requested to Ellicotts' Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States; supposing that an experience of 20 years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT.
Factory, 9th street, near Coates, cor. Melon st.
Office, No. 3 North 5th street,
1y25 Philadelphia, Pa.

GEORGIA RAILROAD. FROM AUGUSTA to ATLANTA—171 MILES. AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO OOTHCALOGA, 80 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 388 miles in length, from Charleston to Oothcaloga on the Oostenaula River, in Cass Co., Georgia.

RATES OF FREIGHT.		Between Augusta and Oothcaloga. 250 miles.	Between Charleston and Oothcaloga. 386 miles.
1st class.	Boxes of Hats, Bonnets, and Furnature, per cubic foot	$0 16	$0 25
2d class.	Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs and Confectionary, per 100 lbs.	0 90	1 40
3d class.	Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Bar and Sheet Iron, Hollow Ware, Castings, Crockery, etc.	0 55	0 75
4th class.	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Feathers, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc	0 37½	0 62½
	Cotton, per 100 lbs.	0 45	0 65
	Molasses, per hogshead.	8 50	13 50
	“ “ barrel	2 00	3 25
	Salt per bushel	0 17	
	Salt per Liverpool sack		95
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 37

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight may be paid at Augusta, Atlanta, or Oothcaloga.

J. EDGAR THOMSON,
Ch. Eng. and Gen. Agent.
Augusta, Sept. 2d, 1846. *44 1y

THE WESTERN AND ATLANTIC Railroad.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.
Atlanta, Georgia, April 16th, 1846. 1y1

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1847.

Winter Arrangement.

Philadelphia for Baltimore	8 a.m. and 4 p.m.
Baltimore for Philadelphia	9 a.m. and 8 p.m.

Connecting in Baltimore with Mail Lines south and west, as per notice of the Baltimore and Ohio Railroad—and with Mail Lines north from Philadelphia, both morning and afternoon.

Sundays, the *Morning* Lines do not run in either direction.

Accommodation train from Wilmington to Philadelphia, leaves Wilmington at 8 a.m., and returns at 2 p.m.

J. R. TRIMBLE,
2tf *Engineer and General Superintendent.*

LITTLE MIAMI RAILROAD.—OPEN TO SPRINGFIELD—Distance 84 miles—connecting at Xinia and Springfield with Messrs. Neil, Moore, & Co's. daily daylight lines of stages going east and north, to Columbus, Zanesville, Wheeling, Cleveland, and Sandusky City. via Urbana, Bellefontaine, Kenton, and the Mad river and lake Erie railroad, or Columdus, Delaware, and the Mansfield and Sundusky City railroad—forming, by these connections, the cheapest and most expeditious route to Buffalo, Niagara Falls, Rochester, Albany, New York, and Boston.

On and after Thursday, August 13, 1846, until further notice, a Passenger train will run as fllows:

Leave Cincinnati daily at 9 A. M., for Milford, Foster's Crossing, Deerfield, Morrow, Fort Ancient, Freeport, Waynesville, Spring Valley, Xenia, Old Town, Yellow Springs, and Springfield.

Returning, will leave Springfield at 4 hours 35 minutes A. M. A line of Hacks runs in connection with the Cars, between Deerfield and Lebanon.

FARE—From Cincinnati to Lebanon	$1 00
“ “ “ Xenia	1 50
“ “ “ Springfield	2 00
“ “ “ Columbus	4 00
“ “ “ Sundusky city	8 00

The Passenger trains runs in connection with Strader & Gorman's line of Mail Packets to Louisville.

Tickets can be procured at the Broadway Hotel, Dennison House, or at the Depot of the Company, on East Front street.

Further information and through tickets for the Stage lines, may be procured at P. Campbell, Agent on Front street, near Broadway.

The company will not be responsible for baggage beyond 50 dollars in value, unless the same is returned to the conductor or agent, and freight paid at of a passage for every $500 in value over that amount.

The 1½ P. M. train from Cincinnati, and the 2 40 P. M. train from Xenia, will be discontinued on and after Monday, the 10th instant.

A freight train will run daily.

47tf W. H. CLEMENT, *Sup't.*

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily	$26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia	22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

1y25 JOHN KING, Jr, *Agent.*

RAILWAY IRON.—THE BEST QUALITY of English Heavy H Rails—60 lbs. to the yard—now in store, landing from the vessel, and on ship board to arrive, for sale on most favorable terms by

DAVIS, BROOKS & CO.,
Jan. 2. [1tf] 68 Broad St., New York.

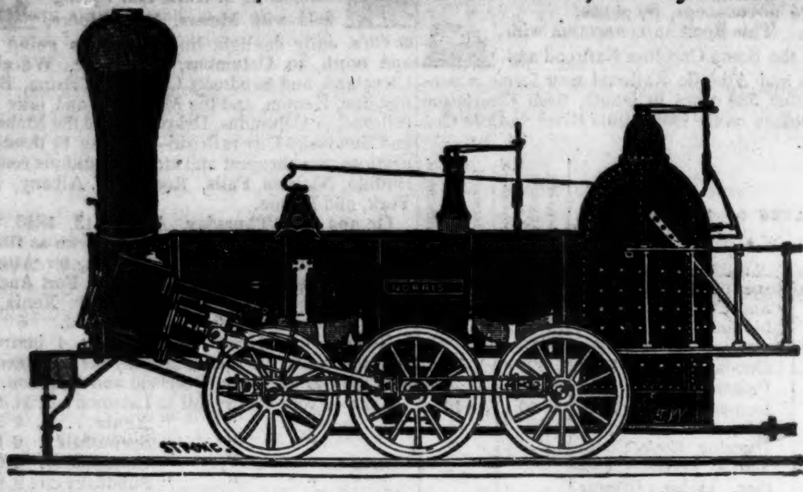
TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

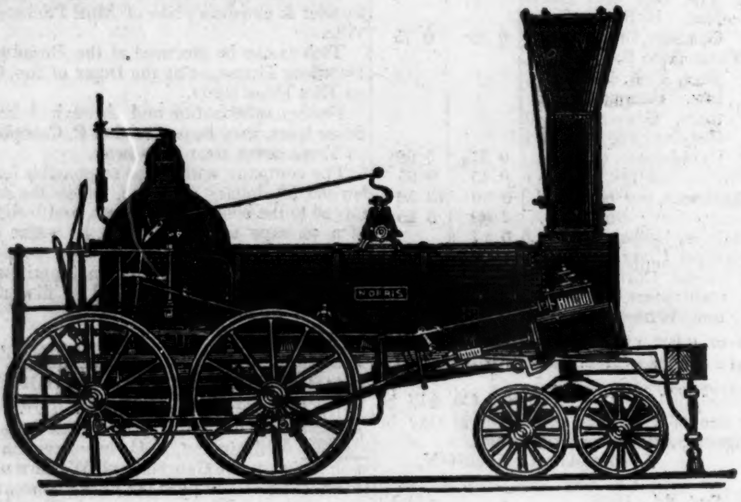
When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa

NORRIS' LOCOMOTIVE WORKS.

BUSH HILL, PHILADELPHIA, Pennsylvania.





MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15	inches	Diameter	of	Cylinder,	× 20	inches Stroke.
"	2,	14	"	"		"	× 24	" "
"	3,	14½	'	"		"	× 20	" "
"	4,	12½	"	"		"	× 20	" "
"	5,	11½	"	"		"	× 20	" "
'	6,	10½	"	"		"	× 18	" "

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion.

Castings of all kinds made to order: and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

NORRIS, BROTHERS.

KEARNEY FRIE BRICK. F. W. BRINLEY, Manufacturer, Perth Amboy, N. J. Guaranteed equal to any, either domestic or foreign. Any shape or size made to order. Terms, 4 mos. from delivery of brick on board. Refer to

James P. Allaire, } New York.
Peter Cooper, } New York.
Murdock, Leavirt & Co. } New York.
J. Triplett & Son, Richmond, Va.
J. R. Anderson, Tredegar Iron Works, Richmond, Va.
J. Patton, Jr. } Philadelphia, Pa.
Colwell & Co. } Philadelphia, Pa.
J. M. L. & W. H. Scovill, Waterbury, Con.
N. E. Screw Co. } *P*rovicence, R. I.
Eagle Screw Co. } *P*rovicence, R. I.
William Parker, Supt. Bost. and Worc. R. R.
New Jersey Malleable Iron Co., Newark N. J
Gardiner, Harrison & Co. Newark, N. J

25,000 to 30,000 made weekly. 35

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
a45 President of the Newcastle Manuf. Co.

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by

A. & G. RALSTON
Mar. 20tf 4 South Front St., Philadelphia.

VALUABLE PROPERTY ON THE MILL Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 fe. with lathes, work benches,

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side o Parker st., containing 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

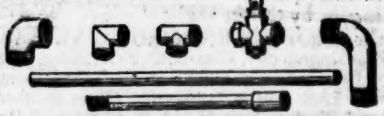
For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & Co., Philadelphia. ja45

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ½ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER Flues.



Manufactured and for sale by

MORRIS, TASKER & MORRIS.

Warehouse S. E. Corner of Third & Walnut Streets,

PHILADELPHIA.

TO LOCOMOTIVE AND MARINE ENgine Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by

MORRIS TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut Sts., Philadelphia 1tf

PATENT INDESTRUCTIBLE WATER Pipes. The subscribers continue to manufacture the above PIPES, of all the sizes and strength required for City or Country use, and would invite individuals or companies to examine its merits.—This pipe, unlike cast iron and lead, imparts neither color, oxide or taste, being formed of strongly riveted sheet iron, and evenly lined on the inside with hydraulic cement. While in the process of laying, it has a thick covering externally of the same—thus forming nature's own conduit of stone. The iron being thoroughly enclosed on both sides with cement, precludes the possibility of rust or decay, and renders the pipe truly *indestructible*. The prices are less than those of iron or lead. We also manufacture Basons and D. Traps, for Water Closets, on a new principle, which we wish the public to examine at 112 Fulton street, New York.

28tf J. BALL & CO.

Items from late English Papers.

Legal and General Life Assurance Society.—Having on so many former occasions called the attention of our readers to the increase of institutions for securing to the community the advantages of life assurance, and having ever endeavored to impress upon the mind the incalculable benefits which arise from its legitimate application, we need offer no apology for now calling attention to the above society, which has been established 10 years, and which has just arrived at the time appointed for making its first division of profits among the assured. At this, the commencement of a new period, the directors have determined to make some considerable alteration in the terms of assurance to which they had hitherto adhered, and considerably to extend the advantages commonly allowed to policy holders, convinced that they might be very much increased and enlarged with great benefit to all parties concerned. In all future assurances effected with this company, the age of the life of the assured will be admitted at the time of issuing the policy—so that the difficulties and delays occasioned by proving the age after death will be avoided. Individuals assured in this office will be allowed to pass by sea between any two places in the same hemisphere more than 33° from the equator, and to reside in Canada, New South Wales, Cape of Good Hope, Madeira, and any other place more than 33° north or south latitude. If an assured commits suicide, and the policy is vested in another, the money will be paid the same as on a usual policy; if by the party assured, a sum will be returned to the survivors equal to the entire amount of premiums paid; and in case of death by duelling, or by the hands of the law, the amount of the policy will be also paid. The benefits, to be attached to future policies, have been extended to all existing policies. These are certainly advantages: and their concession shows that the directors are men of business, fully alive to the change which is gradually taking place in the principles which hold society together, and that they will rather anticipate, than be behind in the great march of liberality and enlightenment.

The Thames Economical Steamboat Company.—Among the numerous undertakings for the investment of capital, which the year 1847 is likely to see brought before Parliament, is the above, formed for establishing safe, convenient, and economical steam communication from London bridge, both up and down the river, upon an equalized scale of fares, in proportion to the distance each passenger may have to go. Steamboats of the most approved construction will be built, and so arranged, that while they afford relief from a hot summer, shelter will be afforded from rain, and plenty of cabin room provided. A peculiar feature in the prospectus, and one which we think bids fair to place the company in a first rate position, is the construction of powerful barges for the conveyance of heavy merchandize to and from the various vessels lying in the river, docks, quays, warehouses, etc., which barges will be built on such a principle, that they can be employed as steam tugs, for the purpose of towing heavily laden barges, etc., to all parts of the river. In this portion of the business, we observe they are already patronized by a very large number of merchants, factors, boatbuilders, wharfingers, etc., on the river; 150 of whom have already expressed their intention of supporting the company, on such suggestion being carried out. It is, therefore, proposed immediately to construct 15 boats for these purposes; and the engines will be on Mr. Fell's patented principle for the generation of steam, by which one fifth of fuel is saved, and it creates an immense power in a few minutes, without the least danger of explosion. The capital is to be £200,000, in 40,000 shares of £5 each, and each shareholder is to receive free passage tickets to the full amount of his subscription. A well regulated system of fares, according to distance, will, most probably, in connection with commodious boats, be an attractive feature in this scheme; but, there is no doubt, that the steam barges will pay well, whether used as vehicles of carriage or as tugs for other barges; and it is evident that merchants, lightermen, and others, will find it to their interest to employ them, from the immense saving which must result to them in the time occupied in the transit.

Miners' Strike, Hours of Labor and Remuneration.—We have received a letter from a correspondent, who signs himself "A Colliery Bailiff," dated West Bromwich, in reference to the contemplated strike of the miners of the South Staffordshire district for a reduction of the hours of labor, for which notice was given a fortnight ago. The writer points out very clearly and sensibly some of the evils of these "turn outs," and the nature of the occupation and remuneration of those who are employed in the working of coal mines. We give the statement as it has been sent to us, without, of course, being able to vouch for all the particulars therein stated. He says: "In working the thick coal mines there are two sorts of workmen, viz: pikemen or flewers, who work by the piece or or stent, and bondmen or loaders, by the ton or day. The pikemen have to cut a certain portion, according to the seams or measures, for a day's work of 5s.; and it is very common for them, in the space of eight or nine hours, to cut from one and a half to three of these portions or stents, or so many times 5s. and the bondmen, when working by the day, from 6 a.m. to 6 p.m. with meal time out, have 5s. 6d. per day, and when by the ton, will get from 7s. to 8s. Each man in the pit is allowed two quarts of drink per day, and one ton of coals per month. Pikemen seldom work more than three turns in the week, and the bondmen four days, thus taking their own time for recreation. on which plea a strike is called for. It is with difficulty that they can be got to work even this time; since their wages have been advanced to the present prices, there is less work done; and it is a lamentable fact, that these useful men, instead of devoting their attention and a portion of their time to their domestic and social improvement, spend it in drunkenness, gaming, dog fighting, pugilism and such like, which are more injurious to the constitution than the gases in the mines. With respect to the unhealthiness of their occupation, it is the general opinion that colliers are less liable to disease than mechanics, and there numbers in this district who have attained a good old age. Those gases which are most injurious are seldom lodged in the working part of the mines, where the ventilation is attended to, accidents and loss of life only occurring when they are recklessly entered into. Now as regards these strikes, they originate with some of the most idle and lazy, who scarcely ever work in one colliery many days, and are constantly going to and fro, until discarded by most. They then begin to agitate in clubs, lodges, etc.: and not the least of the evils which follow is the driving of the trade from the district, and the increase of poor rates, for as soon as the colliers leave off work they begin to beg, and leave their families to seek for themselves. The result of this state of things is a suspension of works, manufacturers unemployed, shopkeepers and householders obliged to pay advanced prices for coal; and to the coal master and iron master an increase of royalty, rates, taxes, etc., follow. This ultimately brings on a panic, such as followed the strike of 1842. It is to be hoped, that the steady and thinking portion of the colliers will ponder well on the consequence of the step they are about to take, and not be led away by the lazy or designing, who have their own objects to serve, and who would adopt any schems rather than work for an honest livelihood.—***Birmingham Journal.***

Iron Vessels.—We must not forget the very important improvement in the introduction of iron from the destruction of vessels, which enables us to combine lightners and elegance of form with strength and durability. For this valuable addition to marine architecture, we are indebted to Aaron Manby. In 1820–21 he constructed at Horseley, near Birmingham, a wrought iron boat, called the *Aaron Manby*, 120 ft. long and 18 ft. beam, and when laden drawing 3 ft. 6 in. water; it was propelled by Oldham's feathering paddle wheels, worked by a single engine of 80 horse power; and was built for the purpose of plying on the river Seine. The boat was completed in 1821–22, and was navigated across the Channel by the present Sir Chas. Napier, who was deeply interested in the undertaking; it was not only the first iron vessel that ever made a sea voyage, but also the first that conveyed a cargo from London to Paris direct, without transhipment. She continued plying between Paris and Havre for several years, until superseded by other more powerful and improved boats: the hull is yet in existence, and is still used with new engines on board, as are three others, which were built about the same time. In 1831 Maudsley and Field built four iron vessels for the East India Company, for the navigation of the Ganges, and fitted them with oscillating engines, of the united power of 60 horses; they were 120 ft. long, 24 ft. beam, and drew 2 ft. water; they were so successful that six more were ordered shortly afterwards. The use of iron, however, did not make much progress until recently, on account of the prejudices and obstacles which generally, if not invariably impede the progress of all great inventions. At present, iron is much employed for vessels, and promises in many cases to supersede timber. Objections against its general employment have been urged, on account of the bottoms of the vessels being liable to become foul on long voyages; and for the purposes of war, the splinters of the iron when struck by shot are said, from recent experiments, to be more detrimental than from wood. The art of building iron vessels is, however, in its infancy; and it is very probable that further experience and investigation will, in a great measure, obviate the evils. The strength, lightness, and other qualities that have been mentioned, give it great advantages for the construction of fast sailing passage vessels; and the water-tight bulkheads constructed with it, give great additional security in case of accidents; these water-tight bulkheads are now almost universally adopted; but the precise date and origin of their introduction is not very clear. Captain Evans, of Holyhead, proposed them for timber vessels in the year 1826, and soon after that time they were used in an iron vessel constructed by Grantham for C. W. Williams, Esq. Examples of their importance have frequently occurred, demonstrating the necessity of their introduction into all vessels, whether for river or sea navigation.—*Sir John Rennie.*

Hemp and Flax Manufacturing Company.—We have on various occasions noticed the measures which are being taken for the re-establishment, on a more extensive basis, of the company, formed some years since at Rugeley, in Staffordshire, for the manufacture of hemp and flax of all countries, under an entirely new process, patented by Mr. Doulan. Although extensively advertised, the greater number of the shares are taken up by parties connected with the existing company: the business generally has been arranged and managed by J. Simpson, Esq., of 25, Moorgate street; and it may now be said to be brought to a successful issue, as applications have been made for a much larger number of shares than was originally contemplated, and the allotment is expected to take place in a week or ten days. The invention is one of considerable importance, as establishing the manufacture of an article far superior to any previously produced; and which, while it reflects the greatest credit on the inventor's ingenuity, has so far, and is likely still more so, under the employment of an extended capital, to make an ample return for the investment.

Solders for Brass and Copper.—The *Dictionare Technologique*, a French work of great value in the arts, recommends the following mode of making solders for brass. Two kinds of solders are used for this purpose, the hard and the soft. The hard is made in the following way: take 16 parts of brass and 1 of zinc, melt the brass in a crucible, and also heat the zinc. When the brass is melted the zinc is thrown hot into the crucible, which is then covered, and the whole well shaken together. In about two minutes, pour the metal through the twigs of a birch broom, placed over a proper vessel of water. The metal by this process is divided into small grains, after which it is well washed and kept for use. The proportions may vary from those given to two parts of brass and one of zinc. A *hard solder* for copper is made by the above process, only substituting copper for brass in the proportion of eight parts of copper to one of zinc. This makes quite a fusible solder, which is at the same time malleable; ten parts of copper and one of zinc make a harder but less fusible solder. The *soft solder* for brass is made of six parts of brass, one of zinc and one of tin. The brass is first melted, the tin is then added, and lastly the zinc, which last metal should be first well heated, then shaken and divided as above directed.

Mineral Wealth of England—In the course of a lecture delivered yesterday to the general classes of King's College, by Mr. Tennant, on mineralogical geology, the lecturer stated that the annual value of the mineral produce of England amounts to about £25,000,000. Of this 9,000,000 is from coal, 8,400,000 from iron, 4,200,000 from copper, 920,000 from lead, 400,000 from salt, 390,000 from tin, 60,000 from manganese, 35,000 from silver, 22,000 from alum, 8,000 from zinc, and 55,000 from the various other metals, as antimony, bismuth, arsenic, etc.—*London Times.*

Ventilation of Coal Mines.

The vast importance of a system of perfect ventilation being applied to our collieries, and the positive proofs which the late fearful calamity at Oldbury, with the almost countless explosions which have preceded it, give us that the present methods of working coal are founded in error, render every suggestion worthy of notice, more particularly when it comes back by long experience and scientific acquirements. We have received a pamphlet from the pen of Mr. B. Gibbons, of Shutend House, near Dudley, dedicated to Philip Williams, Esq., a magistrate of Staffordshire, and an extensive proprietor of mines—in which the author, we verily believe, approaches nearer to the great desideratum than any of the numerous, but futile, plans, which have been so often paraded before the public, but which have proved to be as far as ever from a correction of the evil. Written in an unassuming and intelligible style, the author takes the hourly operations of Nature for the basis of his system, common sense for the means of application, and explains his premises with this homely illustrations which all may understand. First, ascertaining the *cause* of the generality of these alarming accidents, and the insufficiency of the present means of ventilation, to keep up *constantly* and in *one direction* the necessary current of air, he suggests a remedy founded on the most simple, yet scientific, laws, and which we shall now endeavor to explain to our readers. To show the difficulties in an attempt at the removal of local prejudice, he says, that when he first descended the thick coal pits, 45 years ago, he found the gate road and the air head driven side by side on the floor of the mine: it struck him that this must be wrong; and, after much patience, and more by authority than persuasion, he succeeded in raising the air head so much, that the bottom of it was on a level with the top of the gate road: since that period he has climbed 6 ft. higher, or about the middle of the coal, and he still hopes to get to the top. By this method he has succeeded in opening the coal—so that it is now perfectly free from gas in every part of the workings. Having shown that the quantity of air for the supply of men, horses, and candles, should generally greatly exceed 40 cubic feet to one of carburetted hydrogen evolved, he protests, *in limine* against *all* artificial means of obtaining ventilation, whether by air pumps for forcing air in, or exhausting pumps for drawing it out, or even the furnace at present so generally in use, which, however, in some cases, may prove an useful auxiliary; but he deprecates all power which is not self acting. We now come to the details of his plan. A colliery is to be established where the coal lies at the depth of 140 yards; the first step is to sink two round pits or shafts (say) 7 ft. diameter each, down to, and through, the stratum of coal, 30 ft. in thickness; the gate road, or horse way, is then to be driven in the bottom of the coal 9 ft. wide and 8 ft high, commencing from the bottom of the downcast shaft. At the same time, or rather before, as it should always be a little in advance of the gate road, an air way is commenced for the upcast shaft about the *middle* of the coal, or 15 ft. high from the floor; this gate road and air way are then driven in parallel lines for 180 or 500 yards, according to the quantity of coal intended to be cleared, and spouts or openings are to be driven from the gate road upwards into the air way, at from 10 to 15 yards, according to the quantity of gas given out. Having arrived at the furthest point at which it is intended to get the coal, the gate road is driven at a right angle to its former direction, still accompanied by the air way; and, when it has proceeded 10 or 15 yards, to pass thro' a rib, to be left for the support of the road and air way, the excavation is stopped—the preparatory measure for making a side of work about an acre, or taking away the whole stratum of coal, then begins; and now we come to the important part of the system, which is to ventilate all these roads and headings, and a cavity containing more than 1,000,000 cubic feeet of space, and also carry off all the gas incessantly issuing from the coal. The coal is now undermined, and dropped down in large masses, until 15 feet in thickness have been removed, when the air way is reached, up to which period the air has descended the downcast pit, travelled along the gate road, *ascended* to the air way, which it has traversed, ascended the upcast pit, and, carrying with it all the gas and vapors, delivered them into the open air. Having removed this 15 ft. of coal, the air way is no longer of use—in fact, no longer exists; and every cavity above becomes a reservoir of gas. In fact, it may be estimated at 400,-

000 ft. of hydrogen floating on the air beneath. He now shows that, if it were possible to bring the whole of this to the firing point at one moment, the consequences would be too fearful to contemplate; but as portions of the gas become sufficiently charged with air, explosions follow in succession. To overcome the danger, a current of air must be compelled to enter, and clear out every cavity formed; and this current must move in *one* and the *required* direction, and have sufficient force to overcome all extraneous force, either of wind or change of atmosphere, copious enough to neutralize the gases produced, and leave sufficient for men, horses, and candles; but these conditions cannot be fulfilled under the present system, and, even if a sufficient current was obtained, it would be useless, so long as the up and downcast pits are used in working shafts. The upcast, which is the main air way, ought always to be closed from the external air, and guarded from disturbance, to prevent the slightest interruption to the current; it is however, often kept in constant commotion by the ascent and descent of skips loaded with coal, which nearly fill the shaft. A carriage, called the runner, is also drawn over the mouth at every landing of a skip, and thus completely cuts off the current; but when a rope or chain breaks, the skip rapidly descends, and forces the gas in the workings *down* upon the workmen's candles. Having completed the workings as far as described, a chimney, 60 to 90 ft. in height, is to be erected, and put into communication with the upcast shaft; the top of this chimney being in an atmosphere of much less density than that of the workings, or even at the surface, a certain, constant and self-acting draught is obtained.

The work contains some diagrams of different forms of shafts, by which one can be made available, having a recess of 4 ft. square on one side for the air chinney or upcast, which one man could carry down, and keep pace with the sinking, and cast iron cylindrical curbs, with a segment divided off for the air way for sinking in sandy strata. Mr. Gibbon has adopted the lofty stack, in connection with the upcast pit, for 25 years;—and which, to increase the draft, may be raised to 120 ft., and even higher; in every case he has been completely successful—the thick coal abounded with gas, but is now so completely drained, that all difficulties have vanished, and the men have no such thing as a safety lamp in his pits. A great improvement has taken place in their health; and in his King Swinford pits the air is generally 62° to 64° Fah.; while in neighboring pits under the old system, it is from 74° to 76°—the former the temperature of a comfortable sitting room, the latter that of a heated cotton mill. Here, then, is a system certainly new to us; but which, from the properties and laws by which the movements of the permanently elastic fluids are regulated, is evidently founded on scientific principles, and would, doubtless, in every case where prejudice did not intervene, prove as successful as in the author's. We most sincerely recommend this little work to the attention of coal owners, and all interested in the rescuing so many thousands of our fellow-creatures from the dangers which surround them; and, though the author, much to his credit, has evidently published it not for *sale*, but for gratuitous distribution, we have no doubt but all connected with collieries would obtain one on application. We cannot close without one extract on a subject on which we have often animadverted—viz: the crying deficiency of being destitute of a Mining College. He says—"If these few observations should have the effect of quickening such a movement, I shall think myself richly rewarded by this alone, for the trifling trouble this little book has given me; I have endeavored to be brief, and my object has been to write in such language as will be best understood by all. I have felt myself called upon to point out the practical means which experience has disclosed to me, as best calculated to abbreviate (at least) the frightful list of suffering which humanity recoils from; I also felt that it was discreditable to a trade (containing in its ranks so many intelligent men) to realize before the world, the fable of 'the Carter and Hercules,' and, like the former, call aloud for that assistance from the government, which *must* at last emanate from themselves."

Progress of Continental Steam Engine Manufacture.

The rapid strides which engineering science has made in this country, within the last 20 years, has raised a spirit of emulation among the principal mechanics in France and Belgium, to endeavor to approach, at least somewhat nearer to that superiority which has been here attained, and which, had it not been for the near-sighted policy which at one time prohibited the exportation of all machinery, would have established England as the machinery mart of the whole continent of Europe. Unable thus to obtain our engines, and which they could not imitate, hundreds of our best mechanical workmen were enticed by the engineers of France and Belgium, at exorbitant wages, not only to undertake the fabrication of engines on the English plan, but to instruct foreign workmen in their art; and it was this importation of British science into Belgium, that raised the fortunes of Cotterell, of Seraing. The English restriction was soon repealed; but the mischief had been done; for, notwithstanding the vigilance of the custom house, not only men, but models and castings to a large extent, continually found their way across the Channel. Among the most celebrated engine manufactories in France, are the establishments of Hallette, of Arras, and Schnieder, of Creuzot, who have gained their renown at the expense of British science and industry; and many of the most celebrated manufacturing engineers on the continent have Englishmen for their foremen and best artizans. From a report of M. Jobard, director of the Belgian Museum of Industry, made to M. Thieux, Minister of the Interior, after an industrial tour through the south of France and Switzerland, it appears that Mulhausen may well be termed Manchester in miniature; there are here several large works for the manufacture of steam engines, principally on the expansive principle. One is a joint stock company, in which 600 men are employed, who turn out a locomotive engine every week, at a cost of £2050, while Ridder, of Belgium, charges but £1000. One of the three large stationary engines for the atmospheric railway, from Paris to St. Germains, was made at this company's works, one at Hallette's, and the third at Seraing. Mulhausen also contains numerous factories for tools and implements, and power cotton mills, employing a working population of 36,000 persons daily. At Thun and Zurich there are also very extensive factories of steam engines, particularly at the latter city, in which is the large house of Zocher, Weyss, & Co., who are famous for colossal water wheels, for applying to advantage the numerous water falls with which Switzerland abounds. These facts show the policy it would be for the continental governments to reduce the restrictions on British iron—a metal, the cheap and easy attainment of which forms the very basis of the progress of science. We have no doubt Belgium will be the first to set the wise example: of France we have no hope, until the people become aware of the cost of iron monopoly, and when absolute scarcity shall cause the pressure from without to force the repeal of the duties from a reluctant government—the tools of the ironmasters.—*London Mining Journal.*

English Iron Trade.

The correspondent of the London Mining Journal, furnishes the following remarks in regard to the *Iron* Trade:

Business commenced this year under considerable difficulties, arising from the tightness of the money market, which was experienced more or less in all parts of the world, especially in India—the demand from whence having been thus decreased, added still more to the depressing influence.

Iron, though not the subject of such extensive speculations as in the preceding year, has yet occupied a prominent position in the metal market, and sales, both for exportation and especially for home consumption, have transpired to a large extent. The price of rails in January last, was £12 10s. to £13, at which rate about 35,000 tons were sold; from a slight decrease in the demand, and the forced sales of speculators, the price fell £1 10s. to £2, until it reached £9 5s. to £9 10s., at which rate about 10,000 tons exchanged hands; it recovered about 10s., at which a sale of 20,000 tons for America were reported. Since which, the price has ruled £9 10s. to 9 15s., free on board; sales, some of which are of very great extent, are continually occurring at these rates, and makers generally are full of orders. The price is expected to go higher from this, as well as other causes, especially the difficulty of procuring coal, and the present scarcity of ore. Bar, though at times subject to a trifling depression from natural causes, has yet been well maintained by the incessant demand for home consumption; it is now held firmly at £9 15s. to £10 in London, and higher prices may be expected.—Scotch pig commenced the year at 80s. for No. 1, at which considerable business took place; prices since then have continually fluctuated, but not to such an extent as to warrant anyvery extensive speculation: it has at times, it is true, receded as far as 66s. to 67s. 6d., but the general aspect was so uncertain that few could venture upon it; it has, however, within the last two or three weeks manifested such unequivocal symptoms of revival, that a better spirit seems to pervade the minds of dealers, sales at improving prices are constantly reported, and accounts from both Liverpool and Glasgow report the gradual and steady advance of rates. The article is extremely scarce in the London market. No. 1 may be quoted 76s. to 77s. 6d., mixed No. 74s. to 75s. cash. Should a reduction of the duty in France take place, which is highly probable, a fresh stimulus will be given to the pig iron trade. Welsh and Staffordshire pigs are in good demand, and makers generally are busy; several large parcels in speculators' hands have been sold for consumption.

Accidents on the Worcester Railroad.

A series of collisions took place on the Worcester railroad on Wednesday afternoon by which three or four persons were injured, four locomotives were disabled, and several cars smashed. The Albany train which had been delayed for some reason or other, came in contact with a gravel train which was backing up the track, and the engine of the former was considerable injured, though no person was hurt. The men on the gravel train, about 30 in number, all jumped off before the collision. Before he jumped off, the engineer of this train reversed the engine, but the force of the shock set it going again, and it started off down the track at full speed, ran a distance of 7 miles to the 35th mile post, without any one to guide it and then stopped just at a curve, where the 4 o'clock train from this city ran into it, not seeing it until about 100 feet from it. Both engines were considerable damaged. A message was sent to Westboro' to detain the steamboat train and another to Worcester, and Mr. Moody, depot master at W. immediately set to work to clear the South track, which has been undergoing repairs, and on which there were placed several freight cars to be out of the way.

As soon as matters could be cleared up. the steamboat train took the 4 o'clock train in tow and proceeded towards Worcester, with instructions to the engineer to proceed slowly and with caution, but just as it passed the bridge in Worcester, the speed having been increased, it came in contact with some of the freight cars above mentioned, which were on the track, sufficient time not having elapsed to enable the workmen to remove them all. Here the most melancholy part of this series of accidents, occurred. The engine and two of the passenger cars were much injured, and Mr. Flint, one of the road hands, was so severely hurt that he died of his wounds about midnight. Mr. Page of Metheun, a passenger, was badly bruised. R. K. Porter, brakeman on the boat train, had his leg broken, and several other persons were somewhat hurt. Mr. Dana, depot master in this city, left with a special train at 11 o'clock last night, carrying with him Dr. Winslow Lewis, but as there was no need for his services he returned immediately.

We learn from the Courier that the conductor of a freight train on the Western railroad, which left Worcester about two o'clock yesterday afternoon, fell from his train soon after starting, and was almost instantly killed by the concussion. The train immediately stopped, and before it could get out of the way an inward bound train came in collision, and both engines were much injured.

From the Portland Advertiser.

Androscoggin and Kennebec Railroad.

The organization of the Lewiston and Waterville Railroad Company took place at Winthrop on the 5th inst. It was undoubtedly the most numerously attended railroad meeting ever held in Maine, and the enthusiasm and unanimity that pervaded all its measures have been without any parallel as far as we have known, in relation to any similar enterprize.

The meeting for organization was appointed to take place at 1 o'clock in the afternoon of the 5th inst. But on the evening of the 4th, a numerous body of the stockholders from Bangor and several of the principal towns in Penobscot county as well as from Somerset, Franklin and Oxford, and a still greater number from Cumberland, Lincoln, and Kennebec were present.

An informal meeting of the stockholders was held at 9 o'clock A. M. of the 5th, and a full and very animated discussion was had upon the various questions coming before the stockholders.

Messrs. Boutelle of Waterville, Morrill of Readfield, S. P. Benson of Winthrop, Taylor of Fairfield, and Goodenow of Portland, were appointed a committee to prepare and report By-Laws for the action of the stockholders.

Messrs. Morrill of Waterville, Prescott of Farmington, Bachelder of Readfield, Small of Portland, and Brown of Portland, were appointed a committee to examine the subscription books, and make return of the amount of the stock taken in the several towns.

The committee on By-Laws made a report, in which they recommended, that the number of Directors be fixed at 9—the charter allowing the stockholders to fix the number at 7, 9 or 13.

A motion was then made to strike out 9, and insert 13. This gave rise to an animated discussion, in which Messrs. Poor, Little, Judge Preble and Goodenow of Portland, and Prof. Champlin and Mr. Boutelle of Waterville, G. A. Benson of Winthrop, and Taylor of Fairfield participated, and the amendment was adopted without a count, and the report accepted as amended.

The committee on the stock subscription then reported, that on the subscriptions returned, (two being absent) 8750 shares had been subscribed, and 5 per cent. advance paid in. It was afterwards voted that the books be kept open during the day, and shares were subsequently taken up to a considerable amount.

It was then voted that the same committee apportion to the several counties their number of Directors, who finally reported that the Directors be taken as follows:

1 from Penobscot county.
1 from Franklin "
1 from Lincoln "
2 from Somerset "
5 from Kennebec "
3 west of the Androscoggin river.

The stockholders from the several districts, after they returned, named their candidates as follows:

Timothy Boutelle and Jedediah Morrill, Waterville; Samuel P. Benson, Winthrop; Lott M. Morrill, Readfield; Reuben B. Dunn, Wayne; Josiah Prescott, Farmington; Samuel Taylor, Jr. Fairfield; John Ware, Athens; W. B. S. Moor, Bangor; Josiah Little, Jr., Lewiston; John Fox and William Goodenow, Portland; Hobart Clark, Andover, Mass.

The forenoon was consumed in a very brisk and spirited discussion of the various matters connected with the railroad, while the crowds of people who flocked into town during the forenoon, gave the streets the appearance of an 1840 mass meeting.

The stockholders were organized at Carr's Hall, by the choice of EDWARD LITTLE, Esq., of Lewiston, as Chairman, and JOHN GOODENOW of Auburn, as Clerk, and adjourned to the Rev. Mr. Thruston's Meeting House, which, in anticipation of their adjournment, had been filled to its utmost capacity long before the appointed hour. The By-Laws reported were unanimously adopted.

The committee having reported names for the *thirteen* Directors, a ballot was taken and 6204 shares were represented, and the gentlemen before named were severally elected, with scarcely a dissenting vote.

Mr. Moor, of Bangor then offered a resolution responding to the proposition or resolution adopted at the Bangor mass meeting, favoring an union at Waterville of the Androscoggin and Kennebec and Penobscot and Kennebec railroad companies, by which a continuous line of railway from Bangor to the Atlantic and St. Lawrence railroad should be secured. After a full and able speech from Mr. Moor, explaining the position of affairs at Bangor, and remarks from several other gentlemen, the question of passing the resolution was taken by rising, and carried by acclamation and without a dissenting voice.

Several gentlemen then came forward, asking permission to take further stock, and an exciting debate sprung up on the subject, while the subscription was going on.

Lamp without a Wick.

Few will hesitate to admit that if a lamp can be so constructed as to support a clear flame without the use of any wick whatever, it must be an important invention; and such is the principle of an invention, a description of which is given by the inventor as follows:—

"The fluid to be burnt is put into any suitable reservoir for holding it. This reservoir is placed above, and a little one side of the point where it is to be burnt. From this reservoir, there is to be a pipe, which is to project downwards and turned or bent out horizontal. At the end of this pipe there is to be a short glass tube set in. The top of this tube is enlarged into a cup-like form, and sets up perpendicular in it. The pipe which this is set into has a faucet valve in it, the same as in a gas pipe. This valve is to open and close the connection between the reservoir and glass tube. When the fluid is to be burnt, the valve is opened to allow the fluid to pass through it into the glass tube, up to its surface. It is now to be closed until the fluid in the tube is fired, when it is opened enough to allow it to pass through as fast as it will burn without smoking. By turning the valve it regulates the passage of the fluid to give more or less light, as in a gas pipe valve. The shape of the cup part of the tube may be of any suitable form, to give the air a free chance to combine with or support the combustion of the burning fluid, and of a size suited to the amount of light required.

"I have tried the principle with oil and it burns equally as clear and bright as with a wick, and will give any amount of light required; and I see no reason why it would not be an advantage, for it would be less work to keep them in order than lamps with wicks. It would be inconvenient to apply it to hand lamps; but where the lamps are fixed or stationary as in street and light houses lamps, for which latter use it would be a good advantage, for the fluid could be conveyed through one main pipe to as many burning points as required, and give a given amount of light all night, if the reservoir be sufficient above the burning points."

RAILROADS IN THE UNITED STATES.

List of Railroads in the United States.

The following list is intended to include all the railroads and branches upon which construction has been commenced. Some of them no longer exist, or are disused. Still we have thought proper to give them, as already the revival of more than one of them is proposed. We consider them as asleep, but not dead. As far as possible, the current designation of the company is given. In one or two cases the names of the companies which have merged in others, are given when the change is recent, or any particular notoriety attaches to the old name.

The branches, when not belonging to independent companies, are placed at the left hand side of the column *a* without a number.

Columns *b* and *c* show the true termini of the road, and also the number of the connecting road.

In *d* is found the date of opening for use, in some instances of the completion of the road. Where the ? occurs, the date is doubtful; when a blank, no portion of the road has been used.

e Gives the length of the road—this is not always given with accuracy in the reports; when our numbers differ, they will generally be found the most correct.

f Shows the whole cost. This, in some cases, applies to the road alone, in others, it includes depots, engines, etc.—the latter more frequently. When marked *unfin.* and *dis.* it indicates the sum laid out upon a road unfinished and in disuse.

g Shows the form of rail; — denoting the flat rail; T the rail of that form; and Ⅱ the rail commonly known as the H rail. We have retained this mark and name as more distinctive than the more accurate one of ⊥ (inverted T) rail. ∩ (inverted U) denotes what is sometimes called the bridge rail.

h Gives the dimensions of the rail when flat—the weight of the other forms. In one or two cases the weight is given when extra heavy flat or bar rails are used. When several forms are given for one road, the latter denotes that which prevails.

In the column *i*, I denotes a single track; II a double track; and I₂ a partially double track. Most of the railroads in the United States are graded for a double track, and as circumstances require the second track is added.

∞ At the right hand of the sign for the track, denotes each one a tunnel; in the notes the dimensions, etc., are given.

j Shows the number of inclined planes requiring stationary power.

k The maximum grade per mile (excluding the planes). When two numbers are given, the first shows the highest grade prevailing on the line; the first, a higher grade generally at or near a station, etc., or for a short distance, not affecting the character of the line. The dash after a number denotes a grade descending in the direction of the traffic.

l Indicates the least radius of curvature, where two numbers occur, the remark under *k* applies.

m The fare per mile for the through travel.

n The letter C, in this column shows that a communication is allowed; we consider this an important one, as it indicates a disposition to accommodate the [illegible].

In no case has a blank been filled unless by good authority; when any doubt existed, we have preferred leaving a blank to inserting an error.

The sources of information have been: the Railroad Journal, published reports, particularly the Massachusetts reports, reports and maps relative to the coal region, etc.

But above all, we have depended upon the great work of De Gerstner, published by Mr. Klein, at Vienna, in 1843. For minute accuracy, this work is unsurpassed; and singular as it may seem, a German book, published in the centre of Europe, contains information not to be found in any book or books in this country.

No pains have been spared to make this table as complete and accurate as possible. There is a vast amount of information at our hand which cannot be tabulated, but we have endeavored to give the most essential in a reasonable space.

We do not pretend that this table is perfect, as there must, from the nature of the thing, be many blanks and mistakes; but we hope that the endeavor to do the best possible, will be an inducement to all who may possess more accurate information to communicate it. There would be no satisfaction in attempting to correct a mass of errors and absurdity—but such we hope our table will not prove to those who examine attentively.

NOTES.

No. 2. *a* Will meet the St. Lawrence and Atlantic when completed at the boundary line.

b Track five feet wide.

4. *a* United in the former corporation of Maine, New Hampshire, and Mass. railway.

[illegible]

96. *a* The second railroad built in the United States; track three feet six inches wide.

94. *a* The third railroad in the United States.

95. *i* Two tunnels, one 1600 the other 800 feet long.

92.—96. *f* The roads have all been relaid with heavy iron, and the present cost is unknown; 96 just finished.

98. *a* This name is retained, although the road is really the Sunbury and Shamokin, the remainder never having been finished.

e Projected road, 40½ miles.

f Greatly increased by construction, etc., upon the unfinished line.

j Six inclined planes were projected on the old line; the route from Shamokin to Pottsville has been surveyed, a maximum grade of 75 feet per mile.

99. *a* Incomplete. *e* Projected route to Elmira, 75.

101. *a* State work *j* at Philadelphia, 187 feet rise in 2805; at Columbia, 90 feet in 1800.

102. *a* Intended to avoid the heavy grade of No. 101 at eastern end. *f* [illegible] laid out.

103. *a* Same purpose as last.

105. *i* Tunnel fifteen feet wide.

106. *a* State work.

i Tunnel 901 feet long, 20 wide, 19 high.

109. *a* State work, intended for a continuation of No. 110, not a single mile in use, although [illegible] have been expended.

111. *a* A union of three companies, *Baltimore and Port Deposit*, *Wilmington and Susquehanna*, and *Philadelphia, Wilmington, and Baltimore*—the three portions built by each company respectively. *j* of the four, the heavy bar rail, 40 pounds per yard, is unique.

113. *d* Date of opening to Timonium, 11 miles; whole road reconstructed; opened 1838.

i Tunnel 280 feet, (hard rock) near York.

114. About 30 miles partly constructed; line very favorable; capital inadequate.

115. *i* Track 4 feet 6 inches wide.

Raleigh Railroad.—We have only inserted this because it was the first railroad in the state; it was used for carrying stone during the construction of the Capitol; it no longer exists.

No. 124. Sold in January, 1845, and bid in by the state for the amount of the mortgage, [illegible]

[illegible]

RAILROAD JOURNAL OFFICE,
FRANKLIN HOUSE,
[illegible]
D. K. MINOR.

American Railroad Journal, v.20:insert opp. 169;March 13,1847.

RAILROADS IN THE UNITED STATES.

List of Railroads in the United States.

The following list is intended to include all the railroads and branches upon which construction has been commenced. Some of these no longer exist, or are disused. Still we have thought proper to give them, as already the revival of more than one of them is proposed. We consider them as asleep, but not dead. As far as possible, the correct designation of the company is given. In one or two cases the names of the companies which have merged in others, are given when the change is recent, or any particular notoriety attaches to the old name.

The branches, when not belonging to independent companies, are placed at the left hand side of the column a without a number.

Columns b and c show the true termini of the road, and also the number of the connecting road.

In d is found the date of opening for use, in some instances of the completion of the road. When the ? occurs, the date is doubtful; when a blank, no portion of the road has been used.

e Gives the length of the road—this is not always given with accuracy in the reports; when our numbers differ, they will generally be found the most correct.

f Shows the whole cost. This, in some cases, applies to the road alone, in others, it includes depots, engines, etc.—the latter more frequently. When marked unfi. and dis. it indicates the sum laid out upon a road unfinished and in disuse.

g Shows the form of rail; — denoting the flat rail; T the rail of that form; and H the rail commonly known as the H rail. We have retained this mark and name as more distinctive than the more accurate one of ⊥ (inverted T) rail. ∩ (inverted U) denotes what is sometimes called the bridge rail.

h Gives the dimensions of the rail when flat—the weight of the other forms. In one or two cases the weight is given when extra heavy flat or bar rails are used. When several forms are given for one road, the latter denotes that which prevails.

In the column i, I denotes a single track; II a double track; and Iı a partially double track. Most of the railroads in the United States are graded for a double track, and as circumstances require the second track is added.

∞ At the right hand of the sign for the track, denotes each one a tunnel; in the notes the dimensions, etc., are given.

j Shows the number of inclined planes, requiring stationary power.

k The maximum grade per mile (excluding the planes.) When two numbers are given, the latter shows the highest grade prevailing on the line; the first, a higher grade generally at or near a station, etc., or for a short distance, and not affecting the character of the line. The ~ after a number denotes a grade descending in the direction of the traffic.

l Indicates the least radius of curvature, where two numbers occur, the remark under k applies.

m The fare per mile for the through travel.

n The letter C. in this column shows that a commutation is allowed; we consider this an important item, as it indicates a disposition to encourage local travel.

In no case has a blank been filled unless by good authority; when any doubt existed, we have preferred leaving a blank to inserting an error.

The sources of information have been: the Railroad Journal, published reports, particularly the Massachusetts reports, reports and maps relative to the coal region, etc.

But above all, we have depended upon the great work of De Gerstner, published by Mr. Klein, at Vienna, in 1842. For minute accuracy, this work is unsurpassed; and singular as it may seem, a German book, published in the centre of Europe, contains information not to be found in any book or books in this country.

No pains have been spared to make this table as complete and accurate as possible. There is a vast amount of information at our hand which cannot be tabulated, but we have endeavored to give the greatest amount in a reasonable space.

We do not pretend that this table is perfect, as there must, from the nature of the thing, be many omissions and mistakes; but we hope that the endeavor to do the best possible, will be an inducement to all who may possess more accurate information to communicate it. There would be no satisfaction in attempting to correct a mass of errors and absurdity—but such we hope our table will not prove to those who examine attentively.

NOTES.

No. 2. c Will meet the St. Lawrence and Atlantic when completed at the Boundary line.
b Track five feet wide.
4. a United in the former corporation of Maine, New Hampshire, and Mass. railway.
4 & 5 a are now united with No. 4.
6. j Tunnel at Salem.
12. a Now forms part of No. 13.
15 & 17 a are to be connected by a branch from 17 to State line.
19 a This is the shortest road in the United States belonging to a separate corporation. It is wholly in Worcester, and is intended to accommodate local trade.
21. j Tunnel.
23. l A curve of 570 feet at a station.
24 & 25 a are worked by No. 23, the profits are derived from tolls, etc. No. 24 not open one year.
27. a The first railroad in the United States; used for carrying stone from the quarries.
29. a. The three companies of Fall river branch, Middleborough, Randolph and Bridgewater, were separately incorporated in 1845, but before going into operation, they united under the above title, and now form but one corporation.
31. a A consolidation of the Northampton, and Springfield, and Greenfield, and Northampton companies—both recently incorporated.
32. a & e This is commonly supposed to include the whole road between Hartford and Springfield. No. 32 only includes six miles of the road in Massachusetts—the remainder is an extension of No. 33.
33. a Works the whole line; only the ordinary expenses have been estimated.
34. a is to be constructed and worked by No. 35; the funds for construction to be furnished by No. 34; on which they are to receive six per cent. per annum, as a rent.
35. f includes the cost of motive power, etc., on No. [illegible]
36. a leased to 35.
38, a leased to 40, to be renewed by a rail similar to that of 40.
39. a Under joint occupation of 37 and 40.
41. Leased to 42. Tunnel built by 42 through Atlantic street, Brooklyn, over one-half a mile in length, 21 feet wide, 16 feet high, semi-circular brick arch (gravel) 22 inches thick. k. This occurs on the outskirts of Brooklyn, no other grade over 30.
43. Track six feet wide.

Canajoharie and Catskill.—We have placed this road on our list, as it has been partially constructed and in use. It has been sold by the state and the materials removed.

No. 44. i Tunnel at Harlem, 600 feet long, through solid rock.
49. f This road, one of the earliest in the country, has been, in a measure, an experimental one, it is, in fact, rebuilt, hence its apparently great cost.
56. a built for transportation of stone etc.; 320 feet rise in 4½ miles; (not in legislative reports.)
54. g No flat rail.
63. & 64. a probably no longer in existence. g Wooden rails, whole structure very light, particularly in 64.
65. a Formerly Ithaca and Owego railroad, sold by the State.
69. Was sold in March last, on the foreclosure of a mortgage.
70. & 71. m The only known cases where the through fare is the highest. A state tax of ten cents per through passenger, is the reason, but the difference is far beyond this. Thus No. 70 charges to New Brunswick, 50 cents; to the end of the road, three miles farther, one dollar.
74. Has recently been sold for "less than the cost of the iron."
75. Leased to, or owned by, 76.
76. f The great cost arises. A part, from natural obstacles, and in part from [illegible] of the construction.
77. i Three tunnels; one at Phoenixville, 1932 feet long; at Manayunk, 960 feet; at Port Clinton, 1600 feet.

No.	NAME.
1	Bangor and Oldtown
2	Atlantic and St. Lawrence
3	Portland, Saco and Portsmouth
4	Boston and Maine
	Great Falls Branch
5	Boston and Maine Extension
6	Eastern
	Marblehead Branch
	Gloucester Branch
7	Boston and Lowell
	Woburn Branch
8	Nashua and Lowell
9	Concord
10	Northern
11	Central
12	Charlestown Branch
13	Fitchburg
14	Lexington and West Cambridge
15	Cheshire
16	Champlain and Connecticut River
17	Vermont and Massachusetts
18	Boston and Worcester
	Saxonville Branch
	Millbury Branch
19	Worcester Branch
20	Worcester and Nashua
21	Norwich and Worcester
22	Providence and Worcester
23	Boston and Providence
	Dedham Branch
24	Stoughton Branch
25	Taunton Branch
26	Stonington
27	Quincy
28	Old Colony
29	United Corp. of Fall Riv. br., Middleboro', Randolph and Bridgewater
30	New Bedford and Taunton
31	Connecticut River
	Chicopee Branch
32	Hartford and Springfield
33	Hartford and New Haven
34	Pittsfield and North Adams
35	Western
36	Albany and West Stockbridge
37	Hudson and Berkshire
38	Berkshire
39	West Stockbridge
40	Housatonic
41	Brooklyn and Jamaica
42	Long Island
	Hempstead branch
43	New York and Erie
44	New York and Harlem
	(Canajoharie and Catskill)
45	Troy and Greenbush
46	Schenectady and Troy
47	Rensselaer and Saratoga
48	Saratoga and Schenectady
49	Mohawk and Hudson
50	Utica and Schenectady
51	Syracuse and Utica
52	Syracuse and Oswego
53	Auburn and Syracuse
54	Skaneateles and Jordan
55	Auburn and Rochester
56	Rochester
57	Tonawanda
58	Attica and Buffalo
59	Buffalo and Niagara Falls
60	Buffalo and Black Rock
61	Lockport and Niagara Falls
62	Lewiston
63	Scottsville and Caledonia
64	Medina and Darien
65	Cayuga and Susquehannah
66	Tioga coal, iron and manufacturing co.
67	Paterson and Hudson
68	Morris and Essex
69	Elizabethtown and Somerville
70	New Jersey
71	Camden and Amboy
	Bordentown and Trenton branch
	Trenton and New Brunswick
	Trenton bridge
72	Johnstown
73	Camden and Woodbury
74	Philadelphia city
75	Philadelphia and Trenton
76	Phila., Germantown and Norristown
	Germantown branch
77	Reading
78	Little Schuylkill
79	Catawissa
80	Beaver Meadow extension
81	Mauch Chunk
82	Room Run
83	Susquehannah and Lehigh
84	Carbondale
85	Beaver Meadow
86	Hazleton
87	Sugar Loaf Summit and Stafford
88	Buck Mountain
89	Mount Carbon and Port Carbon
90	Schuylkill valley
91	Mill creek
92	Mount Carbon
93	Mine Hill and Schuylkill Haven
	West branch
	Wolf creek branch
	Muddy creek branch
94	Swatara extension
95	Lorberry
96	Good Spring creek
97	Pine Grove
98	Pottsville and Danville
	Bear creek and Buckridge branches
99	Williamsport and Elmira
100	Lykens valley
101	Columbia
102	West Philadelphia
103	Valley
104	West Chester
105	Harrisburg and Lancaster
106	Cumberland valley
107	Franklin
108	Portage
109	Gettysburg extension
110	York and Wrightsville
111	Philadelphia, Wilmington & Baltimore
112	Newcastle and Frenchtown
113	Baltimore and Susquehannah
	Westminster branch
114	Baltimore and Ohio
	Frederick branch
	Washington branch
	Annapolis and Elkridge
	Eastern shore
115	Winchester and Potomac
116	Richmond, Fredericksburg and Potomac
	Deep run branch
117	Louisa
118	Chesterfield
119	Richmond and Petersburg
120	City Point
121	Petersburg
122	Greensville and Roanoke
123	Portsmouth and Roanoke
	Raleigh
124	Raleigh and Gaston
125	Wilmington and Raleigh
126	South Carolina
	Columbia branch
127	Georgia
	Warrenton creek
	Athens branch
128	Central
129	Western and Macon
130	Western and Atlantic
131	Hiwassee
132	Tallahassee
133	St. Josephs and Lake Wimico
134	St. Josephs and Iola
135	Alabama, Florida and Georgia
136	Ocmulgee and Flint
137	Mobile and Cedar Point
138	Linden and Demopolis
139	Cahawba and Marion
140	Selma and Tennessee
141	Wetumpka and Coosa
142	Montgomery and West Point
143	Tuscumbia and Decatur
144	Pontchartrain
145	New Orleans and Nashville
146	Bath
147	Carrollton and [illegible]
148	New Orleans city
149	New Orleans and Lake Borgne
150	Clinton and Port Hudson
151	West Feliciana
152	Alexandria and Cheneyville
153	Mexican Gulf
154	Mississippi
155	Vicksburg and Jackson
156	Raymond
157	Jackson and Brandon
158	Grand Gulf and Port Gibson
159	Lagrange and Memphis
160	Lexington and Ohio
161	Portage
162	Mad River and Lake Erie
163	Little Miami
164	Mansfield and Sandusky
165	Cleveland and Newburg
166	Fairport and Painesville
167	Ohio
168	Southern
169	Central
170	Northern
171	Erie and Kalamazoo
172	Palmyra and Jacksonburg
173	Ypsilanti and Tecumseh
174	Raisin River and Lake Erie
175	Detroit and Pontiac
176	Shelbyville and [illegible]
177	Madison and Indianapolis
178	Lawrenceburg and Indianapolis
179	Central
180	Peoria and Warsaw
181	Bloomington and Mackinaw
182	Northern Cross, R. R.
183	Alton and Shelbyville
184	Branch of Central
185	Alton and Mount Carmel
186	Alton and Shawneetown
187	Rushville and Erie
188	Galena and Chicago
189	New Pittsburg and Mississippi

State works. (Nos. 179–187)

Entered, according to Act of Congress, in the Clerk's Office of the District Court of the Eastern District of Pennsylvania.

81. a The second railroad built in the United States; track three feet six inches wide.
84. a The third railroad in the United States.
85. i Two tunnels, one 1020 the other 820 feet long.
90—93 f The roads have all been rebuilt with heavy iron, and the present cost is unknown; 94 just finished.
98. a This name is retained, although the road is really the Sunbury and Shamokin, the remainder never having been finished.
e Projected road, 60 miles.
f Greatly increased by construction, etc., upon the unfinished line.
j Six inclined planes were projected on the old line; the route from Shamokin to Pottsville has been surveyed, a maximum grade of 73 feet per mile.
99. a Incomplete. e Projected route to Elmira, 75.
101. a State work j at Philadelphia, 187 feet rise in 2805; at Columbia, 90 feet in 1800.
102. a Intended to avoid the heavy grade of No. 101 at eastern end. f $400,000 laid out.
103. a Same purpose as last.
105. i Tunnel fifteen feet wide.
108. a State work.
i Tunnel 900 feet long, 20 wide, 19 high.
109. a State work, intended for a continuation of No. [illegible], not a single mile in use, although $800,000 have been expended.
111 a A union of three companies, *Baltimore and Port Deposit, Wilmington and Susquehannah,* and *Philadelphia, Wilmington, and Baltimore*—the three portions built by each company respectively. j of the four, the heavy bar rail, 40 pounds per yard, is unique.
113 d Date of opening to Timonium, 11 miles; whole road reconstructed; opened 1838.
i Tunnel 280 feet, (hard rock) near York.
116. About 20 miles partly constructed; line very favorable; capital inadequate.
123. i Track 4 feet 6 inches wide.

Raleigh Railroad.—We have only inserted this because it was the first railroad in the state; it was used for carrying stone during the construction of the Capitol; it no longer exists.

No. 125. Sold in January, 1845, and bid in by the state for the amount of the mortgage, $300,000!
126. a Union of the South Carolina Canal and Railroad company, and of the Louisville, Charleston and Cincinnati Railroad company; the former owning the road to Hamburg, the latter the branch to Columbia.
127. a Banking company.
128. a Banking company.
129. a Formerly *Monroe Railroad*; f, g, recently sold and purchased by the present company, who have rebuilt the road in a permanent manner.
130. a State work; e whole length 139 miles; 80 miles in use and much of the balance graded.
133. a About 15 miles from Pensacola graded, and much material on hand.
135. a Nearly the whole road ready for use.
f Built under General Brisbane, upon the Fourier system; cost not ascertainable.
g Wooden rail.
137. Abandoned and iron taken up.
138. Nearly the whole graded.
140. About 25 miles graded.
141. More than half graded.
143. & 145. i track 5 feet 6 inches wide

Some of the railroads in the vicinity of New Orleans, have been sold and the iron taken up; we are without precise information as to the present condition of most of them.

154. e About 45m. graded and rail laid on part.
156. e Nearly complete, after a long delay, (six years,) the small amount yet required is about to be raised.
160. a e Intended to run to Louisville, 82½ miles.
f After deducting $17,000; the cost paid by lessees.
162. a f A small portion finished for several years; now under contract for whole distance.
163. e Finished to Springfield to No. 162; whole distance, 84 miles.
164. a Formerly Monroeville and Sandusky, length 13 miles; cost about $200,000; has been recently purchased, and several other charters combined; whole line is now nearly or quite complete to Mansfield.
165. g Wooden rail; track 4 feet 9 inches wide.
166. Wooden rail; track 4 feet 9 inches wide.
167. a Much of the grading, etc. for this line was made: track 7 feet wide! the whole is now decayed and useless; offered for sale by the state.
168. a State road; partly in use.
169. a State road; recently finished to Kalamazoo, and since sold to a company.
170. a State work; partly in use, recently sold.
171. g Wooden rail; it is intended to iron it.
172. g Wooden rail.
173. g Wooden rail.
177. e Recently finished to this length; under contract to Indianapolis, 86 miles.
f State expended $1,5[illegible]; the state receives no dividend for seven years if the road is finished in three years; one-third net profit goes to state after that.
g Dividend in 1845, 8 per cent.; in 1846, 9½ per cent.
179—187 a About one-quarter of the grading, etc., has been finished upon these works, a few miles on No. 182 in use: two or more of these works have been leased to companies, but little has been done by them. Private enterprise seems to be directed to several of the routes.

Whenever a road has been commenced and remains unfinished, and there is any uncertainty as to the precise amount finished, we have marked the whole length of the projected route in ( ); the notes give generally an indication of the amount finished.

All the roads in the United States are 4 feet 8½ inches gauge, with the few exceptions marked in the notes, or in the column j, *inclined planes.*

It is proper to say that every known road has been inserted, because from the table the merits of the line may be discovered, and valuable charters yet in force—good routes, nearly ready for the rails—may for a small sum be obtained, and the whole put in profitable operation. We have, almost by accident, discovered several which are actually in this condition. The old Monroe (Ga.) road is an example of what may be done. We have no doubt that the Illinois routes will, before long, attract the attention of eastern capitalists, and the State will be glad enough to dispose of them at any price to those who will complete them. Indiana has given very favorable terms to the Madison and Indianapolis company, and they are making money, and before long the State will receive a handsome dividend. We mention this to show the necessity of naming all the roads. Eastern people know almost nothing of western roads; and when the western people see the ghosts of their old speculations rise up again, they may be tempted to try to re-animate those which are worth the trouble. At any rate, they may be induced to correct whatever may be wrong, and to supply omissions. As an instance of DeGerstner's accuracy, we mention that in one or two instances, where letters have been published in the Journal, within the last year or so, giving accounts of unfinished or abandoned works, such as from Alabama and Ohio, we find that even to the number of miles of grading, etc., already done, he is exact. Moreover he gives, and we have inserted in the Table, what few persons could send, and in some instances what no one can now tell—the grades, curves, etc., upon located lines—as all his information was obtained from engineers, etc., upon the spot. But we have not relied upon him alone—having searched the Journals for nearly every road, and far more through many volumes.

It should be borne in mind, also, that this Table is based upon the Reports of 1845, and of previous years—and therefore it should be bound up with the volume for that year. The Reports for 1846 are not all published yet, and but very few of those that are published have been received by us; consequently, the earnings and the dividends for that year cannot be given at this time.

Another edition of this table will be issued as soon as we can get returns from all—or nearly all—of the companies now in active operation, to whom an extra copy of the Table is sent, with the special request that errors may be corrected, and blanks filled with the figures for 1846. By attending to this request promptly, they will enable us to make the Table more accurate, and exceedingly useful to all those who are interested in Railroads. It is our intention to issue a large edition and to give it a wide circulation.

RAILROAD JOURNAL OFFICE,
FRANKLIN HOUSE,
105 Chestnut St., Philadelphia.
D. K. MINOR.

American Railroad Journal, v.20: insert opp. 167; March 13, 1847.

LIBRARY
BUREAU OF RAILWAY [illegible]

Correspondents will oblige us by sending in their communications by Tuesday morning at latest.

PRINCIPAL CONTENTS.

Items from late English Papers................165
Ventilation of Coal Mines.....................166
Progress of Continental Steam Engine Manuf..167
English Iron Trade...........................167
Accidents on the Worcester Railroad...........168
Androscoggin and Kennebec Railroad............168
Lamp without a Wick...........................168
Table of American Railroads...................169
Railroad from lake Michigan to the Mississippi.169
Railroads, Bridges, the Canals, etc...........169
Boston vs. New York...........................170
Macadamized and Plank Roads...................170

AMERICAN RAILROAD JOURNAL.
Published by D. K. MINOR, 105 Chestnut St., Philadelphia.
Saturday, March 13, 1847.

MISSING NUMBERS
OF THE RAILROAD JOURNAL.

Subscribers, who wish to obtain Missing Numbers of Back Volumes of this Journal, will do well to apply **BEFORE** *the* **1***st of* **APRIL** *next, as, after that period, they cannot be obtained!*

BOUND VOLUMES.

Volumes of this Journal, for the Years **1838** *to* **1846**, *INCLUSIVE, may be had Bound, at Subscription Price, on application at this Office.*

☞ *One or two* COMPLETE SETS *of the* RAILROAD JOURNAL *may be had in a few weeks—or as soon as two numbers can be reprinted—by application to the Editor.*

TABLE OF AMERICAN RAILROADS.

We have at length completed our long-promised Table of American Railroads. The delay has been much longer than we supposed it would be; yet it will, we trust, be found the more complete by the delay.

By referring to the Table, it will be found to contain a mass of information difficult to be obtained elsewhere, in a condensed form.

The name of the road—its termini—the year when opened—its length—cost—the form and weight of rail—number of tracks—number of inclined planes —highest grade—least radius of curvature—fare per mile—commutation by the season—gross and net revenue and dividends for 1845—are given according to the most authentic documents within our reach; and, in addition, copious notes of reference, explanatory, showing the various connections, etc., are given.

Notwithstanding that much time and research have been devoted to this Table, we are fully aware that, in many cases, the facts—as they *now* exist—are not accurately given: as there is a constant and progressive change in the condition of most railroads. We therefore have to request *each* of our readers—and especially those having the management of railroads—to send us by mail, at an *early* day, the correction of any errors which they may detect in the table, that we may issue a second and corrected edition of it. A little attention and labor on the part of engineers and superintendants of railroads, will enable us to complete the work here commenced, and to furnish, to all who desire it, a mass of useful information, exceedingly difficult to be got at now, even by the most devoted friend of the cause—and we shall therefore keep the "form" standing for *two months*—thus giving *ample* time for —and in hope of—receiving returns from every part of the country.

Opening of the Pennsylvania Canal.

The Pittsburg Gazette of 27th ult. says: "Should no untoward change in the weather occur, we understand that the canal commissioners have given orders to commence letting water into the Western Division on the 3rd or 4th of March. The process will doubtless be a very cautious one, as it is unprecedentedly early. The line is in perfect order, and a few days of drying weather would render it quite secure. Business will now commence in a few days, and we find our transporters all ready to commence operations."

Railroad from Lake Michigan to the Mississippi.

A western exchange, in a lengthy article upon the subject of a railroad from Lake Michigan to the Mississippi river—holds the following language:—"The importance of railroad communication between the different sections of our country, is becoming more and more appreciated. The eastern cities are deeply interested in facilitating intercourse between themselves and the great western valley.—The opening trade with the west is but commenced. The tide of emigration towards those rich and vacant lands is constant; and millions of acres are yet to pour their harvest into the commercial emporiums of the east. The most expeditious channels of intercourse between the east and west will command the passengers and much of the trade. The great western railroad, extending from New York and Boston, will pass on the south shore of Lake Erie, thence across the peninsula of Michigan and round the head of Lake Michigan to Chicago. From this point is the only uncommenced or perhaps unsurveyed part of the route between the great lakes and the father of waters. The completion of a railroad from Chicago to the Mississippi, will consummate the connection between New York, Boston and New Orleans, by an expeditious inland route. The attention of eastern capitalists is invited to the feasibility and importance of this work. By an examination of the map of Illinois, it will be perceived, that directly west of Chicago, the Mississippi makes its great eastern bend, and approaches nearest the Lake. This is the easiest and most natural connection. It is not only the shortest, but the most practicable. It passes through the most beautiful and inviting part of Illinois—one that will require but little grading—settled by an industrious and thriving population, and affording every facility for making a road, and abounding in all the products of the northern and middle States.

A continuous railroad between Lake Michigan and the Mississippi may be made with comparatively little expense. The importance of this route is prospectively great. A railroad from Chicago directly west to the eastern bend of tthe Mississippi will concentrate to one point the northern and southern travel. It will not only greatly facilitate the intercourse between Iowa and the east, but by extending a branch north to Galena, following the grade of the Great Central road, the lead trade may be secured. With another extending down the Mississippi to Rock Island, and ultimately below the lower rapids, where the navigation of the river is uninterrupted for the greater part of the year, it will most certainly become the great channel of communication between the west and south and the eastern cities—embracing the most valuable and important sections of our country. Shall Boston or New York first adventure in this magnificent enterprize? Shall a large part of the Mississippi valley be thus brought into immediate commercial alliance with one part of the east? Great advantages may be secured—who shall win them? The rival cities in this great enterprize are New York and Boston."

Railroads, Bridges, the Canals, etc.

The extended and extensive business upon the Western Railroad, has induced the company to put measures in progress for increasing the capital to $10,000,000 and lay a second track on the road.—This company has labored under serious disadvantages on account of the monopoly between Boston and Worcester, but this road has been exceedingly productive nevertheless. It would not be surprising if a majority of the stock of the Boston and Worcester should ere long be in the hands of the stockholders of the Western: such an event would materially enhance the value of the Western stock.

The Albany correspondent of the Rochester Democrat says the stock for the construction of the Niagara bridge is all taken. The capital is $200,000. Half of it was subscribed in Canada and the balance mostly in New York and Philadelphia.

Contractors in Philadelphia and Pittsburg offer to build a good substantial bridge of wire for $200,000. It will be 40 feet wide—the centre track for cars to connect with the Canadian road through to Detroit, and capable of transporting 300 tons over it at once, at a rate of 10 miles to the hour. There will be two tracks for carriages and a foot path. It will have three spans with abutments 200 feet high. It is supposed it can be completed in two years, which will make it ready for use by the time the Canada road is completed.

Ohio, Indiana, and Illinois are moving in favor of a railroad from St. Louis to the Ohio river. The Ohio Legislature offer the right of way free of charge. The City Councils of St. Louis have memorialized the Legislature of Missouri, for permission to subscribe half a million of dollars to the stock of a railroad to run from that city eastwardly to join such other railroads as may be distributed through the States of Illinois, Indiana and Ohio.

The *silver greys* are waking up to the importance of a railroad communication between Newburyport, Mass., and Lowell direct, via Georgetown, Bradford and Andover. The estimated cost of the road to Bradford (opposite Haverhill) is $209,000, of which a large portion is already subscribed. At Bradford the road will intersect with the Boston and Maine railroad which passes through north Andover; whence a branch may be constructed to Lowell via the new city of Lawrence.

The Harrisburg Intelligencer learns that the Canal Commissioners are making every exertion to open the canals by the 1st of March, and that, if no freshets should occur to produce breaches, they are confident that the several lines will be in order for transportation from the 1st to the 10th of March, certainly not later than the last mentioned day.

It is with much gratification that we announce that by the promptness and enterprize of the citizens of New York and the principal river towns, the entire required capital for the Hudson River Railroad was promptly subscribed in season; and that the public may now anticipate with confidence the early completion of a thoroughfare by which a citizen of New York may take his seat at 7 A. M., visit Albany, spend two hours in business or calling on friends, and return to the city in season for tea, not to say dinner.

According to present appearances the Norwich and Worcester Railroads will be extended to New London without long delay. The New Londoners are wide awake to the enterprize, as well they may be. It would be the first great and good thing ever accomplished for that city, and many of the citizens, even of Connecticut, would soon learn that New London is within the limits of the State. It is proposed to take up all of that road now extending from Norwich to Allyn's Point, and lay the whole of it on the western side of the river Thames, commencing from Norwich and running to New London.—One hour's time will be gained by the operation by passengers to and from Boston or New York. The cost of the improvement is estimated at $300,000.

The stockholders of the Portland, Saco and Portsmouth Railroad Company, have voted to sell their railroad to the Eastern Railroad and the Boston and Maine Railroad Companies, for a perpetual annuity of six per cent. on the capital paid in.

We have frequently noticed "new inventions" and improvements in railroad cars and machinery, which have appeared as "new inventions" only, not having been applied to practical use. We learn from the Boston Post, that Messrs. Butterfield and Cutting have now exhibiting in that city, an improvement that promises to be of great utility. The editor says—The principle is a *self-detacker*, which is applied to each car; and in case of any obstruction on the road calculated to throw the engine off the track, or raise the wheels, each car is instantly detached from the other by the operation of a self-acting lever, thereby saving the passengers harmless. Connected with this improvement is another, denominated a *sparker*, which can be fited to an engine, and is intended to prevent sparks or cinders from passing out of the smoke pipe and annoying the passengers. We understand that the Eastern Railroad Company intend to make immediate application of these inventions to their engines and cars, and from a hasty examination of the models, we think they are admirably calculated to remedy the evils for which they are intended.

The Newburgh branch of the Erie Railroad is progressing in good style. We learn that the work on the whole line is in a state of forwardness, and with the exception of a mile or two at this end of the route, will be graded by the middle of next summer.

The whole stock of the Central Railroad, says an exchange, "has been subscribed for, and several hundred shares over. This road which is to connect Pittsburg with Philadelphia, is an enterprize of much importance to the public in general as well as to Philadelphia in particular. The citizens of Pittsburg have imbibed some degree of prejudice against this route, on account of the opposition manifested by the Philadelphians against the Pittsburg and Baltimore route: but as this circumstance has had the effect to secure both charter and subscriptions to the Central road, the Pittsburghians will be ready to share its benefits."

Boston vs. New York.

A late number of the New York Journal of Commerce contains some statistics which go to show pretty convincingly that the "City of Notions" is treading hard upon the heels of her great rival, "Gotham"—and that Boston is fast outstripping New York in the western trade, by means of the railroad to Albany. The singular success of this road is known to all. It has astonished and alarmed the good people of Gotham, who, relying on their great natural advantages, looked formerly with contempt on this enterprize—never dreaming, any more than the Venitians of old, that so large a part of their old established business could be wrested from them and retained. The history of this road is without a parallel. It presents the singular spectacle of a railway 202 miles long, with two summits—one of 1400 feet above tide, the other 918 feet, and with grades of 83 feet per mile—competing with the steamboat navigation of the world renowned Hudson, a distance of 52 miles less than the railroad! The bearing of this fact on certain questions now agitated in our own community, will be evident to all. "The Western railroad," says Mr. Roebling, a distinguished engineer, in a paper lately read before the Pittsburg Chamber of Commerce, "presents a most forcible argument in support of this *new doctrine*, that the best water communications are destined to become subservient to railroads, for travel as well as freight. I draw your attention to this question: if the Hudson river, between New York and Albany, the best steamboat navigation in the world, 150 miles in extent, is not capable of commanding the trade and travel exclusively, in competition with a railroad of over 200 miles long, from Albany to Boston, with two high summits and objectionable gradients, what may be expected of the success of steamboat navigation on the upper Ohio, in competition with a railroad will located and with moderate gradients. Freight is carried by steamboats at the rate of from two to five cents per 100 lbs. per 100 miles. This is at the rate of from 40 cents to $1 per ton per 100 miles. Coal is transported from Pottsville to Philadelphia by railway at less than $1 per ton per 100 miles. But whether steamboats charge a few cents more or less, will little influence the transport of the great west, while the saving of transhipment and commission, and the certainty, rapidity and safety of conveyance, are of much greater moment to the merchant and the traveller."

Annexed are the statistics from the Journal of Commerce. Whoever examines them will not be surprised that the New Yorkers regard Boston as a powerful rival in the great fields of commercial and general enterprize. Well may they be jealous; for Yankee shrewdness and energy are "hard to beat," under any circumstances, and there is a prospect that at no distant day they will allow the great city of Gotham to share the sceptre but equally with the metropolis of New England. Not only has Boston by a bold stroke appropriated to herself a rich share of the western trade, to secure which New York expended $30,000,000 on her canal, but she has wrested from her the most brilliant part of her commercial glory, in monopolizing the grand enterprize of ocean steam navigation. It is but fair to add, however, that New York is rousing at last to a sense of her situation, and has just subscribed $3,000,000 to the Hudson River railroad, by which she hopes to retrieve her losses:

"Has Boston, since she, with her usual enterprize and sagacity, introduced her iron fingers into the vital source of our internal commerce, been gaining on us in general prosperity or not?

"I begin wirh the year 1841, (that in which the railroad from Boston to Albany was opened,) and contrast it with the past year, 1846.

"I take personal property first.

Boston.	New York.
1841—$36,043,600	1841—$64,843,972
1846— 58,720,000	1846— 61,740,470
Gain, 22,675,400	Loss, 3,373,502
or 63 per cent.	or 5 1-5 per ct.

"Next as to that of real estate.

1841—$61,963,000	1841—$187,350,948
1846— 90,119,600	1846— 183,480,931
Gain, 28,156,600	Loss, 3,870,017
or 45½ per cent.	or 2 per cent.

He tells the proprietors of real estate in New York that,

"Their buildings and vacant lots were worth $187,000,000 in 1841; in the intervening five years they have certainly expended $25,000,000 on them, (and more probably $30,000,000) in replacing old buildings with more appropriate structures, and erecting new buildings on vacant lots; and yet, with all this absorption of current means, their estates as a whole are not worth as much by $4,000,000 as they were in 1841."

Macadamized and Plank Roads.

We have been favored with the following well written communication, from the pen of a gentleman who has had much experience in road making, to which we would call the attention of our readers. Macadamized roads are deserving of more attention than they have received in this country; and we are therefore the more desirous to call attention to the subject. By referring to the early volumes of the Journal, it will be seen that this subject was not overlooked by us at that early day—though it has since been, to a great extent, by the public.

We are obliged to the writer for this, and shall look with interest for his promised article on plank roads.

For the American Railroad Journal.

In a late Railroad Journal I perceive some remarks upon "Plank roads," and I also observe that it is intended to form some such roads, in particular localities, in some parts of the United States, where they are but little known.

I have long been a subscriber to your Journal, and am glad of an opportunity of acknowledging my obligations to its columns, for a great deal of valuable information on the construction as well as the statistics of railroads, and upon many other useful subjects, and I do not know how I can make a better return, than by conveying to you, and to your readers, a practical description of Plank roads in Canada, and of Macadamized roads both in Canada and in England. I wish I could add of railroads also; but, alas! we have not any in Canada of which to give their history. The writer of this communication came out from England to Canada in 1832, with the especial object of introducing an improved system of making roads, having been so employed for many years in England, and bringing with him letters of introduction and recommendation from some of the principal members of the British Government to Sir J. Colborne.

At the period alluded to, April, 1832, there was not in Canada a mile of road made upon, I may say, any system; the consequence was, that even within the first mile of the Capital of Upper Canada, then called Little York, in wet weather the road was one continued mud hole, through which it was difficult for a team of horses, or a yoke of cattle, to draw an empty wagon; the largest load on a wagon, when the roads were in their best state, from the respective mills, within ten miles of the town, was six barrels of flour, and it was difficult to go and return the same day. In the fall of 1832, at the then Governor's suggestion to Parliament, a mile of Macadamized road was ordered to be made as an experiment—the inhabitants, never having seen such a road, could not believe in its asserted superiority and permanency; the mile was made, and from the peculiarly unfavorable nature of the soil, the absolute necessity of perfect drainage, the cost of the stone, which consisted wholly of granite bolders, the total inexperience of the population of the knowledge of stone breaking and spade labor, and the exorbitant demands of the few persons who had stone on their lands, this mile cost £2000. This metal bed, it should be remarked, was 20 feet wide, and the metal laid 11 inches thick; expensive as it was, it has proved itself to be the very best piece of road in Canada, and literally for six or seven years had no repairs made upon it.

The road was made on principles somewhat different, and as it is believed, superior to those since made by the Canadian Board of Works. The metal "bed" was formed very solidly, 11 inches deep within the abutments, and it was exactly of the shape of the road when finished, that is rising in the centre, (or barreled technically) six inches in a road 20 feet wide, and four inches when the width was narrowed to 16 feet. The stone was broken so as to pass thro' a two-inch ring, or in the absence of one, any stone that could not be put into the stone breaker's mouth was considered too large. Up to the present time in 1847, there are but about 18 miles of this road (the Young Street road,) completed.

The next piece of Macadamized road was made in 1837-8, from Kingston to Nappance, a distance of 24 miles, which including bridges all of solid masonry, and cutting down hills, mostly solid lime stone rock, cost on the average about £2000 currency per mile.

About the same time, six miles of Macadamized road were constructed from Brockville on the Perth road, and which cost about £1300 per mile. This road passed over a bed of solid lime stone rock, and there was very little cutting; the stone was taken from the ditches.

Twelve miles were also made from Hamilton towards Beautford, which from the difficulty of ascending the mountain, and other engineering difficulties, cost about £2500 per mile.

No other Macadamized road, strictly so called, has been made in Canada West; about 20 miles of gravelled road was made between Beautford and London, which cost, including grading, about £800 per mile; the stone on this road was only 12 feet wide, and principally constructed of gravel screened and laid down as it came from the gravel pit, except that the large stones were broken and laid on six inches thick *with a flat metal bed.*

These are all the Macadamized roads made in Canada West up to the present time.

Practical Remarks upon Constructing Macadamized Roads.—The great desideratum is draining, and by draining is meant not merely taking off the water into side ditches, but also in constructing tap or off-take drains, by which no water is permitted to stand in the side ditches; and not only so, but where springs break up in any part of the road between the ditches, they must be carried into the side drains, so that the metal bed is always kept perfectly dry. French drains must also be made use of as outlets from both sides of the metal bed through the abutments leading into the ditches: these drains are usually made diagonally, so as to get a better descent; they are about one foot wide, and rather deeper than the metal bed, and serve to carry off the water which falls on the road, and passes through the metal bed, before the materials are become solid. Common observers are not aware, that where a road is not properly drained, if you dig a hole in it the water will rise to its natural height, if not immediately, it will in a short time, and to place broken stone upon a wet clayey surface, would be like putting shot into a batter pudding, it would soon go to the bottom.

Except near cities and towns, 14 feet is sufficient for the metal bed, and the two abutments each 10 feet, and then the side ditches will occupy each six feet wide on the surface, with banks sloping one to one and two feet deep, will give a roadway 46 feet wide, leaving on each side for foot ways, etc., eight or nine feet to the bush.

Near large cities, it will be desirable for a mile or two, to make the metal bed either 18 or 20 feet wide.

The depth of the metal bed should be at least nine inches, and the broken stone should be as near as possible all of one size; nothing is so erroneous as to put large stones at the bottom and small ones on the top; suppose the road to be made of cannon balls and small shot, if the large balls do not come to the top, the small shot would pass between them to the bottom, leaving the heads of the large ones to form a rough and dangerous road.

The size of the stones for ordinary roads should be as before described, but for roads little used, or for light weights, they will make a hard road much quicker by being broken smaller, say half the size.

A road comparatively little used proves a very useful road if the metal bed is only eight feet wide and six inches deep; a large amount in construction is saved, and it has been found that carriages in breaking out to allow others to pass, even if heavily loaded, do not make a deep rut on the natural soil; the truth is, that the abutment of the road becomes hard from not being frequently disturbed, and carriages seldom break out twice exactly in the same spot.

Blinding.—This means laying on to a newly made piece of road, earth, sand, gravel, etc.; a difference of opinion prevails upon the expediency of this practice. The only advantage of it, and it is no small one, is that it presents a much earlier and a much smoother surface to a newly made road, and consequently saves a vast amount of animal labor, till the road in its natural state becomes solid.

Its disadvantages are, that it prevents the stones uniting by their angles, "*the essential principle of a Macadamized road;*" it makes a muddy surface in wet weather, and a very dusty one in dry weather; and nothing is so destructive as water to a well made road, as it occupies the hollow places, and forms the nucleus of a future and a very destructive mud hole, and what is perhaps worse than anything else, as the materials used for blinding will always have some clayey matter in them, which is an absorbent of water, the frost gets into it, and by its expansive force, drives the stones apart from one another, and thus makes a loose quaggy road in the spring and fall, and a shifting sandy road in dry weather.

The advocates for blinding are not aware that a Macadamized road made on sound and scientific principles will begin to become concreted at the bottom, and gradually become hard towards the surface; this is effected by the small fragments of stone broken off by the action of the wheels or the iron shoes of the horses, which, passing through to the bottom layer of the metal bed, fill the interstices and makes a hard body, which process goes on till the whole becomes a solid compact mass. There can be no doubt, therefore, that roads made without blinding will be much more solid, will throw off the water, will not be so easily affected by frost, and be far more durable than a blinded road.

Nor has it been generally known that the durability of a well made Macadamized road, is not more dependant upon the material used, than it is upon the nature and structure of the metal bed. If the stones are evenly broken and evenly laid on, by spreading with shovels, as a malster spreads malt on a floor, and all heaping avoided, the stones by uniting by their own angles, and confined by good abutments, the road partakes of the nature of an arch; and it has been proved in practice, that when the metal bed is become well compacted together, a tunnelled drain may be safely made down the middle without endangering the falling in of the road; all these minute particulars are therefore obviously important in the construction of a Macamized road; and it will be seen by any practical man, that while an attention to them is highly advantageous, the additional expense is comparatively trifling.

A Macadamized road, with a metal bed 16 feet in width and 10 inches in depth, will in practice require about 330 toise of broken stone, of 260 feet to the toise, per mile.

The cost of stone necessarily varies in different parts of the Province; in the Western District, as well as in parts of others, there is literally no stone for many miles together.

Where granite bolders are numerous, they may be collected on the side of the road at $8 per toise; where they have to be carried a considerable distance, the cost will be higher in proportion; a toise of granite bolders weigh from eight to ten tons, according to the shape and size of the stone, a solid cubic foot weighs 180 to 185 lbs.

Where limestone formations exist near the sides of a line of road, the quarrying will cost from five to seven shillings the toise, to which must be added five shillings for throwing upon the road. They will with the breaking at eighteen shillings, furnish a supply of stone at $5 the toise, which is the lowest possible price at which stone can be procured here.

The price paid for breaking granite bolders is from 30s. to 36s. the toise; for breaking lime stone, from 15s. to 20s., according to its hardness. An expert hand will, however, earn at these prices large wages, from $1 50 to $2 per day; an inexperienced or lazy man will not earn half a dollar.

The best Macadamized roads are those which are made of three parts granite and one part lime stone or sand stone.

The cost of ditching, draining, grading, forming the abutments and making the metal bed, under ordinary circumstances, may be estimated at about £400 the mile. This is, however, independent of lowering hills, building bridges or large culverts, or cutting extensive latteral drains, the cost of which, when necessary must be added.

The cost of lowering hills will depend upon their elevation, nature of the soil, whether rock or otherwise; the cost of bridges on the width of the streams, and the nature of the foundation, proximity of materials, etc. Taking 20 miles together in Upper Canada, probably £200 per mile may be a fair estimate for lowering hills and building bridges; this is however necessarily vague and altogether dependant upon circumstances.

A great deal of money has been wasted in pursuing a straight line over hills; a better as well as a cheaper road can be generally made by skirting a hill. It is no farther round the side of an orange than it is over the top of it.

A very mistaken practice has prevailed in Canada in the method of repairing Macadamized roads.

It has frequently happened that before an experienced engineer has completed his work, or probably when he has made a mile or two only, his services are dispensed with, and his place occupied by some one whose services can be obtained at a cheaper rate, (and not unfrequently by one of his foremen,) who is altogether ignorant of the first principles of road making, and wholly destitute of experience, or of the necessary practical or scientific knowledge requisite for either making or repairing roads.

The consequence is, that from want of proper attention the road is allowed to become "*rutty,*" and from the unequal settlement of the metal there are many hollow places, which, if not properly managed, or injudiciously repaired, produce a loss of reputation to the engineer, while the public sustain the double inconvenience of having to travel on a bad road, and of encountering the heavy expense of heaping on a quantity of new material which raise the road too high in the middle, and at a cost twenty times greater than the charge of occasional inspection by a competent and experienced engineer.

The labor of one man will keep in repair three miles of well made and well drained Macadamized road for the first two years after its formation, and four miles for the two years after that—by constantly raking the loose stones into inequalities of the road, and by also raking into the middle from the sides those which have been forced up by the constant pressure of heavy weights in the centre, scraping off the mud, opening water courses, etc.

During the fifth year the road may require to be "lifted," that is (technically) picking up with a sharp well-steeled pickaxe about two inches in depth of the solid metal bed, and spreading it evenly over the entire surface. This will cost about 9d. per running yard. The lower parts of the bed having become a solid mass, equally hard throughout, if this operation be well performed, the road will be better than ever it has been, perfectly free from inequalities on the surface, and will bid defiance to any weather or to any loads which may be drawn upon it, without fresh material for at least two years longer; when, if the metal bed from its wear has become thin, a covering of two inches of new material may be laid on.

The following is a calculation of the cost of an ordinary mile of road, without taking into account lowering hills, building bridges, engineering, compensation for land, toll gates, etc.:

330 toise of stone delivered on the side of the road, at £2	£660
Breaking 330 toise at 30s. per toise	495
Forming, ditching, draining, etc.	400
	£1,555

The following is a calculation of the cost to the public of a Macadamized road for a period of eight years, upon the most moderate scale on which such a road can be constructed in any part of Upper Canada, west of Kingston:

	Original cost of a mile of road as before stated..			£1,555	00
End of 1st year.	Cost of repair	20	00		
	One year's interest*	90	00		
				110	00
2d year.	Cost of repair	20	00		
	One year's interest	99	08		
				119	08
3d year.	Cost of repair	15	00		
	One year's interest	107	09		
				122	09
4th year.	Cost of repair	15	00		
	Interest	113	09		
				128	09
5th year.	Cost of repair, by lifting 1760 yards, at 9d.	66	00		
	Interest	121	10		
				187	10
6th year.	Cost of repair	20	00		
	Interest	132	11		
				152	11
7th year.	Cost of repair	20	00		
	Interest	141	11		
				161	11
8th year.	Repair by a coating of new material two inches, requiring 66 toise stone, at £3 10	231	00		
	Interest	151	12		
				382	12
	The entire cost of the road to the public at the end of eight years			£2,919	10

* Fractional parts of interest are not calculated.

Under the mode of management before described, it is assumed that the road will be as good as new at the end of this period.

JAMES CULL, *Civil Engineer.*

Kingston, C. W., February 23, 1847.

Miscellanea.

Fall River Railroad.—A proposal has been started for the extension of the Fall River railroad through Central Dorchester to Boston. We understand that a strong interest is manifested in Randolph and along the line of the proposed road. We learn, however, that a sufficient amount has been subscribed to ensure the completion of the branch roads already chartered from the Old Colony road to the Quincy quarries and to Milton and Dorchester. The construction of these roads will operate with two fold advantage to the Old Colony road, by securing the travel from those sections and ensuring the Fall River road to the Old Colony as a perpetual branch. We notice that a meeting of citizens of Randolph is to be held next Monday for the furtherance of the project of the Independent route. Why this should be, we cannot well understand. Randolph and the Fall River road are now sufficiently accommodated over the track of the Old Colony road. The Fall River road was originally intended as a permanent and perpetual branch to the Old Colony road; for these ends it was chartered; the branch roads about to be constructed from the Old Colony to different points on the line of the proposed Independent route, will sufficiently accommodate the travel of those sections and render the scheme of the Independent route entirely impracticable.—*Quincy Patriot.*

New Railroads.— A project has lately been started at New London to build a piece of road to connect that place with the city of Norwich. The whole cost is estimated at $300,000. It is believed that by this route a full hour's time will be saved in the journey from Norwich to New York.

The railroad from Worcester to Nashua is already under contract, and being an easy route can be built in twelve months, and then New London will be connected with the Nashua, Concord and the northern railroads, by a continuous line of about 130 miles in length, intersecting the Worcester and Western roads. At Worcester a mamoth depot is to be built, for the accommodation of five roads, viz: the Worcester, Western, Norwich, Nashua and Providence.

A Great Bridge.—The railroad bridge over the Susquehanna river at Harrisburg, just finished by the Cumberland Valley railroad company, is an immense structure. The entire length of the bridge is 3,992 feet. It is built upon an improved lattice plan, the invention of Mr. Kirkpride himself, there being two double and two single segments of lattice. There are 23 spans, averaging 173 feet, and 2 arched viaducts, one 53 feet, and the other 84 feet long. There are two carriage ways, above which, immediately under the roof, is the railway track.

Iron Ore in North Adams.—Extensive and inexhaustable deposits of iron ore have been discovered within a few months, in North Adams, Mass., where a furnace for the manufacture of pig iron has recently been established. The sum of $50,000 has been expended in the necessary buildings and apparatus, and the proprietors are now making 4 tons of iron a day, of a good quality.

Use of Grapes.—Dr. Underhill strongly advises the culture of grapes, both on account of the profit to be derived from the sale of them, and from their value as food to sick and convalescent persons. At a late meeting of the New York Farmer's Club, Dr. Underhill made some highly valuable observations on this subject. After 15 years' trial with various kinds of grapes, he prefers some of our natives, and recommends the Catawba and Isabella. He has three acres of the former and seventeen of the latter. He says our people eat too much animal food, which renders there blood too thick, and causes diseases of the heart, liver and lungs. He thinks it would be infinitely better to substitute grapes and other fruit, for a portion of animal food.

Chinese Artesian Wells.—The Chinese apparatus for boring wells is thus described. It consists of a heavy bar of cast iron six to ten feet long, and from four to six inches in diameter: the lower end furnished with a boring tool combined with a motion pipe, and which is suspended by a rope passing over a large pulley fixed over the bore holes. This weight is wound round a windlass, and the whole is so contrived that the weight may fall from any required height. The tension given to the rope produces a circular motion, sufficient to change the place of the cutting tool at each descent.

Steam Frigate Sidon.—The engines of the British mammoth steam frigate Sidon, above the water level, are entirely made of malleable iron, or of brass metal, in proportions of composition similar to gun metal, and equally hard as the best iron, to resist the action of the shot should they be struck during warfare. The expansion gear is worked by tappits below, and the shaft is perfectly clear of any trapping. Vacuum pumps are used instead of springs or balance weights. The Sidon has also a patent reeling paddle wheel, the floats of which are regulated by those on deck, to suit the changes in draft of water according to the weight on board the vessel at the time.

Wood Screw Machine.—A valuable improvement in the manufacture of wood screws is noticed in the Brooklyn Eagle. The editor says: "It does its work in the most rapid and effectual manner of any bit of machinery we ever saw. By the plan hitherto, each screw had to be taken singly and put through the various operations requisite to its perfectness. But the machine in question does the work by wholesale! It works its own way, too; is susceptible of the application of steam power, and can be taken care of by one-tenth the usual attendance. Another advantage is its simplicity of construction; it is not complicated at all, which all mechanicians know is a a great beauty of enginery * * * * This machine is entirely of American invention, and seems to us calculated to increase the reputation of our country for inventing many of the best, cheapest and most profitable applications of power to machinery, used in any manufactures in any land."

Magnificent Project in England.—A company, with a large capital, are engaged in the erection of twelve hundred houses for the use of the laboring classes, who are to be conveyed back and forth from home to their daily toil by the railway. It is also in contemplation to erect villages at convenient distances from all large cities and towns, to which the working classes can travel every morning and return home at night without costing more than is now expended for badly ventilated and unhealthily-located dwellings for the poor under the present system.

Alarming Railroad Accident.—An accident of a most alarming character occurred on Wednesday last, about 11 o'clock, A.M., to the downward train of cars on the Tonawanda railroad, about a mile from Bergen, N.Y., the particulars of which are as follows: The engineer, it appears, discovered that the axle of the tender was broken, and immediately endeavored to arrest the engine. The train consisted of a baggage car, one passenger car, nearly filled with passengers, and fourteen heavy freight cars, loaded with wheat in bulk. The immense weight and impetus of the freight cars, the train being at its greatest speed, rendered unavailing all efforts to stop the train; and the passenger car together with eight of the freight cars, was thrown off the track, and precipttated some fifteen feet down the embankment. The passenger train fell nearly with its bottom up, and the freight cars burst through the bottom breaking the passenger seats and crushing everything in their way. No life was lost, nor was any one dangerously injured: a result which seems little short of miraculous. Several were slightly hurt, and none wholly escaped from bruises. The passengers, after the utmost confusion and alarm, succeeded in extricating themselves.

Decomposition of Steam.—Mr. G. Gurney states, from experiment, that steam under high pressure is partially decomposed, and that in a state of gaseous vapor, it is capable of heating the iron flues to such an extent that linen is charred, gunpowder fired and metal is fused by it. Mr. G. suggests the use of fusible metal in some part of the pipes as a preventive of fire, for, melting when the flues become too highly heated, it will allow the escape of the vapor, and, of course, assist in cooling the pipes.

Coal vs. Calico.—It is estimated that the amount of capital employed in manufacturing at Lowell is a trifle more than *ten and a half millions* of dollars. The board of trade of Philadelphia in noticing this fact, boast that the capital now invested in bringing the coal of Philadelphia to market, is *thirty four millions* of dollars. It is hardly fair to put the whole of the great state of Pennsylvania against a single town in little Massachusetts. But there is another aspect in the state of their trade, of which they may speak with pride. The whole sum expended by government since 1804 for roads, fortifications, harbors and rivers, say the board, does not much exceed *seventeen millions*, which is but half the sum expended by Pennsylvania in constructing avenues to bring one of her chief staples to market.

A Great Bridge.—The new railroad bridge across the Susquehanna at Harrisburg, is an immense structure. It is about four thousand feet long, built upon the improved double latticed plan. There are twenty three spans, averaging one hundred and seventy-three feet each; and two arched viaducts, one fifty three feet, and the other eighty four feet long. The entire cost of this immense structure is short of $100,000.

Waterford Manufacturers.—In the small village of Waterford, Saratoga county, there is the largest fire engine manufactory in this country. Twenty-four fire engines were made here last year, twelve hose carriages, 10,000 feet of leading hose, and 500 feet of suction. Nothing but fire engines are manufactured by Mr. Button, and orders are supplied by him to every part of the U. States, with a satisfaction, we have been informed, which won for him a prize of $500 in Massachusetts, and was, with a liberality deserving much encomium, immediately made a present of to the fire company that got his machine, and was victorious in the contest. Waterford is quite a smart manufacturing village. Mr. Gage's machine shop is famous for the manufacture of slide lathes and printing presses. Here also is the well known button manufactory, so much indebted to the genius of that celebrated mechanic, Mr. Barton, whose biography we trust we shall soon be able to present to the readers of the Mechanics' Journal. There is also the linen twine manufactory of Mr. Beardsley, producing a great amount of shoemaker's thread and warps for coarse carpets. There is also a foundry in this place, and a number of grist mills. Waterford is situated on the banks of the Hudson and Mohawk, and is well adapted for manufacturing except in times of high water, which from the nature of its location produces what is called back water on the wheels, and either stops their movement altogether. or much diminishes their speed. The only remedy for this is a steam engine to be used in such cases, and which has been successfully and economically used in a number of places, such as at the Lodi foundry, Syracuse, and at the Rochester railroad machine shop.—*Mechanics' Journal.*

Peterboro' Railroad.—A meeting of the Stockholders of the Peterboro' and Shirley Railroad Company was held at Townsend, on *Tuesday* last, for the purpose of passing upon the location of the road, previous to filing of the same with the county commissioners. A majority of the stock subscribed was represented, and the location as reported and explained by Mr. Parker, the Engineer, was unanimously approved and confirmed. Authority was given to the Board of Directors "to make such alterations in said lines as may be deemed necessary and for the interest of the company."

The work of grading this road is going on with much activity, and it is expected that it will be completed before the coming in of August. At a meeting of the Directors, same day, further assessments on the stock were laid, payable on the 10th of April, 1st and 15th of May, and if these are promptly paid, as the previous ones have been, the entire road may be ready for the cars in October.—*Bunker Hill Aurora.*

Ogdensburg Railroad.—A meeting of the Directors of the Ogdensburg Railroad Company, we understand, is to be held in the city, on the 15th March, at which Mr. Hayward will submit his report of his recent surveys. This report, we learn, will be of the most favorable character, as to the results of the survey. A highly eligible route has been obtained with grades no where exceeding 26 feet to the mile easterly and 40 feet to the mile westerly—a good country through which to build a road—abundance of good material and very little rock cutting. The prospect of this road, in the important matters of construction and business, are of the best possible description. It can be built at a cost probably lower than that of any New England road, and of its legitimate and certain business, no reasonable estimate can now be made. The Directors, no doubt, will take some decided measures to have the construction of the road put under contract, as soon as it may be done. The people on the line of the road, who have subscribed liberally to its capital stock, are anxious to see the work commenced, and we hope their expectations will soon be realized. Northern New York, to say nothing of the immense country north and west, ought to be opened to the business and population of Boston.—*Bunker Hill Aurora.*

Kennebec Railroad.

We learn from the Portland Advertiser, that the engineers upon the Kennebec and Androscoggin railroad, have found a practicable spot to cross the Androscoggin just above the falls at Lewiston, which will save about one half of the expense of constructing the bridge over that river, upon the estimate first made by Mr. Hall when crossed at a different point.

We also learn that the working survey has been extended to Greene, and the route found more favorable than anticipated.

We congratulate the friends of the road upon this favorable commencement of the work, and as the crossing of the valley of the Androscoggin was the most difficult part of the route, this survey to Greene settles the question as to this road being constructed at a very cheap rate as compared with other roads. The subscriptions in the various towns are going on, and the amounts raised in some towns double nearly the sum anticipated.

RAILROAD IRON.—THE "MONTOUR Iron Company," Danville, Pa., is prepared to execute orders for the heavy Rail Bars of any pattern now in use, in this country or in Europe, and equal in every respect in point of quality. Apply to MURDOCK, LEAVITT & CO.,
Agents.
1y48 77 Pine St., New York.

RAILWAY IRON.—DAVIS, BROOKS & Co., No. 68 Broad Street, have now in port on Ship-board, 200 Tons of the best English heavy H Rails, 60 lbs. to the lineal yard, which they offer for sale on favorable terms, *also*, about 6 to 700 Tons now on the way, to arrive shortly, of the same description of Rail. 46tf

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee

G. A. NICOLLS,
Reading, Pa.
jn45

RAILROAD IRON.—THE SUBSCRIBER'S New Rail Iron Mill at Phœnixville, Pa., is expected to be ready to go into operation by the 1st of September, and will be capable of turning out 30 to 40 tons or finished Rails per day. They are now prepared to receive orders to that extent, deliverable after the 1st of Octobet next, for heavy rails of any pattern now in use, equal in quality and finish to best imported.

PIG IRON.—They are also receiving weekly 150 to 200 tons of No. 1 Phœnix Foundry Iron, well adapted for light castings.

REEVES, BUCK & CO,
45 North Water St., Philadelphia,
or by their Agent, ROBT. NICHOLS,
28tf 79 Water St., New York

THE SUBSCRIBERS, AGENTS FOR the sale of

Codorus,
Glendon,
Spring Mill and
Valley,
} Pig Iron.

Have now a supply, and respectfully solicit the patronage of persons engaged in the making of Machinery, for which purpose the above makes of Pig Iron are particularly adapted.

They are also sole Agents for Watson's celebrated Fire Bricks and prepared Kaolin or Fire Clay orders for which are promptly supplied.

SAM'L. KIMBER, & CO.,
59 North Wharves,
Jan. 14, 1846. [1y4] *Philadelphia, Pa.*

RAILROAD IRON.—THE NEW JERSEY Iron Company, Boonton, N. J., are now preparing to make Railroad Bars, and are ready to take orders or make contracts for Rails, deliverable after the first of December next. Apply to

FULLER & BROWN, Agent,
No. 139 Greenwich, corner of Cedar street.
September 18, 1846. 10t39

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight paperen barrels, by

JOHN W. LAWRENCE,
142 Front street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y

---

LOCOMOTIVE AND CAR AXLES. The Subscribers are now prepared to receive orders for the well known and approved *Reading Locomotive and Car Axles*—drawn to any required pattern from *Bloom Iron only*. Address

SAM'L KIMBER & CO.,
Willow Street Wharf,
4tf Philadelphia, Pa.

BACK VOLUMES OF THE RAILROAD JOURNAL for sale at the office, No. 105 Chestnut street.

A. & G. RALSTON & CO., NO. 4 South Front St., Philadelphia, Pa.

Have now on hand, for sale, Railroad Iron, viz:
180 tons 2½ x ⅝ inch Flat Punched Rails, 20 ft. long.
25 " 2½ x ½ " Flange Iron Rails.
75 " 1 x ½ " Flat Punched Bars for Drafts in Mines. A full assortment of Railroad Spikes, Boat and Ship Spikes. They are prepared to execute orders for every description of Railroad Iron and Fixtures. 1tf

---

ENGLISH PATENT WIRE ROPES—FOR THE USE OF MINES, RAILWAYS, ETC.—for sale or imported to order by the subscriber.

These Ropes are manufactured on an entirely different principle from any other, and are now almost exclusively used in the collieries and on the railways in Great Britain, where they are considered to be greatly superior to hempen ones, or iron chains, as regards safety, durability and economy. The plan upon which they are made effectually secures them from corrosion in the interior, as well as the exterior of the rope, and gives a greater compactness and elasticity than is found in any other manufacture.

Many of these ropes have been in constant operation in the different mines in England, and on the Blackwall and other inclined planes, for three and four years, and are still in good condition.

They have been applied to almost every purpose for which hempen ropes have been used—mines, heavy cranes, standing rigging, window cords, lightning conductors, signal halyards, tiller ropes, etc. Reference is made to the annexed statement for the relative strength and size. Testimonials from the most eminent engineers in England can be shown as to their efficiency, and any additional information required respecting the different descriptions and application will be given by

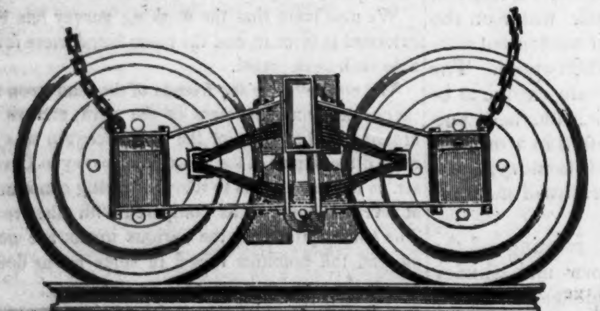
ALFRED L. KEMP,
75 Broad street, New York, sole agent in the United States.

Statement of Trial made at the Woolwich Royal Dock Yard, of the Patent Wire Ropes, as compared with Hempen Ropes and Iron Chains of the same strength.—October, 1841.

WIRE ROPES.				HEMPEN ROPES.			CHAINS.		STRENGTH
Wire gauge number.	Circumference of rope.	Weight per fathom.		Circumference of rope.	Weight per fathom.		Weight per fathom.	Diameter of iron.	Tons.
	INCH.	LBS.	OZ.	INCH.	LBS.	OZ.	LBS.	INCH.	
11	4½	13	5	10	24	–	50	15-16	20
13	3¾	8	3	8¾	16	–	27	11-16	13½
14	3½	6	11	7¼	12	8	17	9-16	10½
15	2¾	5	2	6¼	9	4	13½	1-2	7½
16	2⅝	4	3	6	8	8	10½	7-16	7

N.B. *The working load, with a perpendicular lift, may be taken at 6 cwt. for every lb. weight per fathom, so that a rope weighing 5 lbs. per fathom would safely lift* 3360 *lbs., and so on in proportion.* 1y24

RAY'S EQALIZING RAILWAY TRUCK.—THE SUBSCRIBER having recently formed a business connection in the City of New York, expressly for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.



The above Truck has now been in use from one to two years on several roads a sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Secor & Co., foot of 9th street, East river, (of which firm the subscriber was late a partner) under the immediat supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846. W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, they have proved to be the best and most economical truck now in use.

[Signed,] WILLIAM ROE, Sup't of Power.

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845. [Signed,] G. A. NICOLL,
Sup,t Transportation, etc., Philadelphia and Reading Railroad.

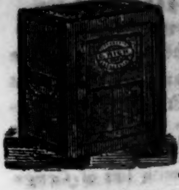
To all whom it may concern:—This is to certify that the N. Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use. [Signed,] T. L. SMITH,

Jersey City, November 4, 1845. N. Jersey Railroad and Transp. Co.

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car.

For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

Long Island Railroad Depot, } [Signed,] JOHN LEACH,
Jamaica November 12, 1845. } 1y19 Sup't Motive Power.



RICH & CO'S IMPROVED PATENT SALAMANDER SAFES.

Warranted free from dampness, as well as fireand thief proof.

Particular attention is invited to the following certificates, which speak for themselves:

TEST No. 10.

Certificate from Mr. Silas C. Field, of Vicksburgh, Mississippi.

On the morning of the 14th ult., the store owned and occupied by me in this city, was, with its contents, entirely consumed by fire. My stock of goods consisted of oil, rosin, lard, pork, sugar, molasses, .iquors, and other articles of a combustible nature, in the midst of which was one of Rich's Improved Patent Salamander Safes, which I purchased last October of Mr. Isaac Bridge, New Orleans, and which contained my books and papers. This safe was red hot, and did not cool sufficiently to be opened until 16 hours after it was taken from the ruins. At the expiration of that time it was unlocked, when its contents proved to be entirely uninjured, and not even discolored. I deem this test sufficient to show that the high reputation enjoyed by Rich's Safes is well merited. S. C. FIELD.

TEST No. 11.—*Certificate.*

By the fire which occurred in this village on the 27th July last, our Law Office, together with many other buildings, was destroyed—we had in our office one of Rich's *Improved* Patent Salamander Safes, which, though heated red hot, preserved, without being the least damaged, many papers valuable to our clients—the envelopes of a few papers being *slightly* scorched. Some twenty-four hours after the fire, the Safe was removed, and so hot was it, that several hours were required for it to cool off. Our office was in the second story of a large brick building, all the wood used in construction of said house being *pitch pine.* While the Safe was red hot, one of the walls tumbled in, and so injured the lock that it was necessary to break the door open. From this test, we feel no hesitancy in recommending "Rich's Patent Salamander Safe" as *entirely fire proof.*

GOREE & KING.

Marion, Ala., Sept. 15th, 1846.

Still other Tests in the Great Fire of July 19, 1845.

The undersigned purchased of A. S. Martin, No. 138½ Water street, one of Rich's Improved Patent Salamander Safes, which was in our store, No. 54 Exchange place. The store was entirely consumed in the great conflagration on the morning of the 19th inst. The safe was taken from the ruins 52 hours after, and on opening it, the books and papers were found entirely uninjured by fire, and only slightly wet—the leather on some of the books was parched by the extreme heat. RICHARDS & CRONKHITE.

Benton, Miss., December 27, 1845.

One of Rich's Improved Salamander Safes, which I purchased on the 2d of June last of A. S. Marvin, 138½ Water street, agent for the manufacturer, was exposed to the most intense heat during the late dreadful conflagration. The store which I occupied, No. 46 Broad street, was entirely consumed; the safe fell from the 2d story, about 15 feet, into the cellar, and remained there 14 hours, and when found, I am told, and from its appearance afterwards, should judge that it had been heated to a red heat. On opening it, the books and papers were found not to have been touched by fire. I deem this ordeal sufficient to confirm fully the reputation that Rich's safe has already obtained for preserving its contents against all hazards. (Signed,)

WM. BLOODGOOD.

New York, 21st July, 1845.

Reference made to upwards of nine hundred and fifty merchants, cashiers, brokers, and officers of courts and counties, who have Rich's Safe's in use.

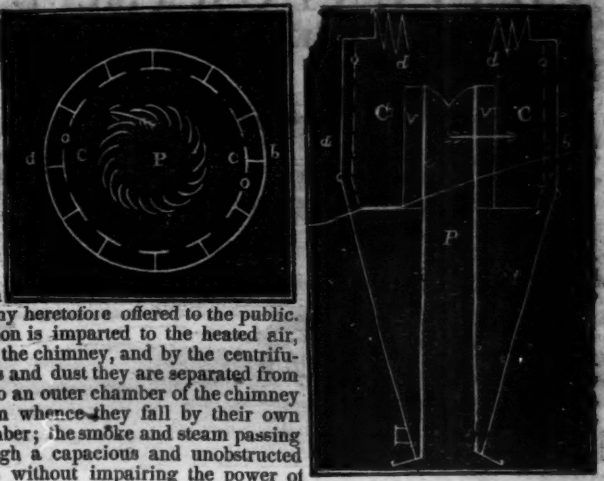
The above safes are finished in the neatest manner, and can be made to order at short notice, of any size and pattern, and fitted to contain plate, jewelry, etc. Prices from $50 to $500 each. For sale by

A. S. MARVIN, General Agent,
138½ Water st., N. Y.

Also by Isaac Bridge 76 Magazine street, New Orleans.

Also by Lewis M Hatch, 120 Meeting street Charleston, S. C. 16 tf

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.



TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city or to Hinckly & Drury, Boston, will be promptly executed. FRENCH & BAIRD.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms. *Philadelphia, Pa., April* 6, 1844.

⁂ The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston. ja45

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
a45 Paterson, N. J., or 60 Wall street, N. York.

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, *Agent.*

Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

⁂ Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufcturing so as to keep pace with the daily increasing demand.

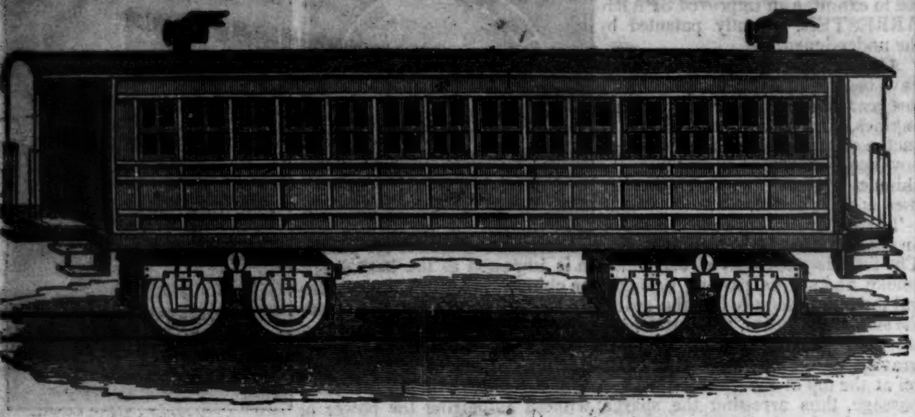
ja45

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engagep in manufacturing Spring Steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent,*
1y Albany Iron and Nail Works,

DAVENPORT & BRIDGES'

CAR WORKS, CAMBRIDGEPORT, MASS.

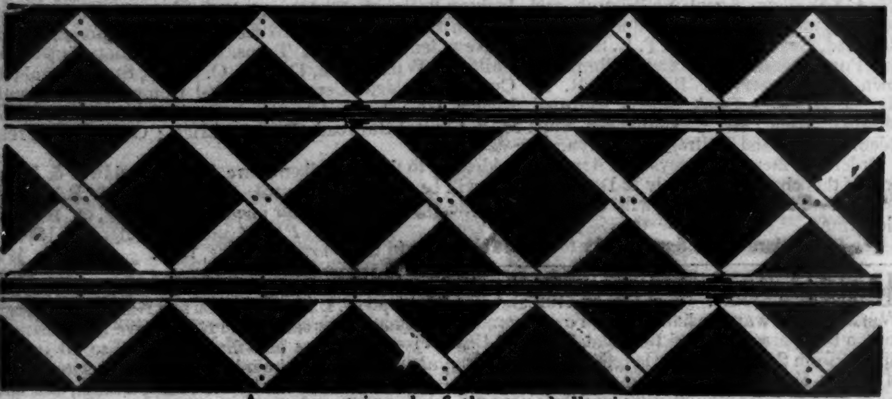


Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes. 10tf

THE HERRON RAILWAY TRACK,



As seen stripped of the top ballasting

A GOLD MEDAL AWARDED THE INVENTOR BY THE AMERICAN INSTITUTE.

THE UNDERSIGNED RESPECTFULLY invites the attention of Engineers, and Railroad Companies, to some highly important improvements he has recently made in the Herron system of Railway structure. These improvements enable him to effect a very large reduction in the quantity of Timber, and cost of construction, without impairing the strength of the Track, or its powers of resisting frost, while they secure additional features of excellence in the Drainage and facility of making Repairs.

The above cut represents the "Herron Track" as it is laid on the Philadelphia and Reading, and on the Baltimore and Susquehanna Railroads. The intersection of the sills of the trellis are 5 feet from centre to centre, while in the new construction they are only 2½ feet. This renders the string piece unnecessary, thus removing the only objectionable feature found in the Track.

The result of experience has proved that all Tracks constructed with longitudinal timbers, such as mud sills, and more especially, the continuous bearing string pieces retain the rain water that falls between the Rails, which, being thus confined, settles along those timbers, and accumulating in quantity flows rapidly along them on the descending grades, washing out the earth from under the timber, and frequently causing large breaches in the embankments of the road. Whereas all water intercepted by the oblique sills of the trellis, is discharged immediately into the side ditches.

In the 5 foot plan, the Track occupies a Road bed nearly 11 feet wide, while the new construction takes but 8 feet; the timber being more concentrated under the Rails. A block of hard wood, about 2 feet long and 15 inches wide, is introduced into a square of the trellis for the purpose of giving an additional, and effectual support to the joints of the Rails, which rest upon it. Should these joint blocks become chafed and worn by the working, and imbedding of the chairs, as is now the case on all Railroads, they can be readily replaced without any derangement of the timbers less liable to wear.

The following is a general estimate of its cost near the seaboard. In the interior it will be considerably less.

ESTIMATE OF THE PROBABLE COST OF ONE MILE.

4,224 Timbers, 11 ft. long, 3 x 6 inches = 68,696 ft. b.m., at $10 = ...	$686 96
587 Oak joint blocks 2 ft. x 3 x 15 in. = 4,403 ft. b.m., at $13 = ...	57 24
13,000 Spikes = 2,250 lbs. at 4½ cts	101 25
Workmanship free of patent charge.......	600 00
Cost of one mile including the laying of the Rail	$1,445 45

He has made other important improvements, which will be shown in properly proportioned models, that give a much better idea of the great strength of the Track than a drawing will do.

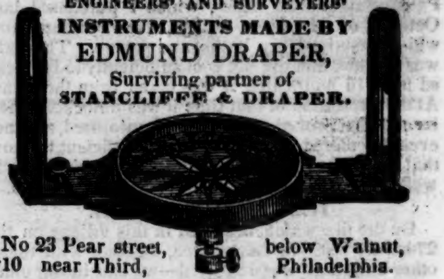
Sales of the Patent right to all the distant States will be made on liberal terms.

JAMES HERRON.
Civil Engineer and Patentee.
No. 277 South Tenth St., Philadelphia. 33tf

FRANKLIN HOUSE,

No. 105 Chestnut Street, Philadelphia.

The undersigned takes the liberty of calling the attention of the readers of the Journal to the fact that the *Office* is removed from New York to the FRANKLIN HOUSE, *Philadelphia*, where he will be always pleased to *meet* and *greet* them. They will not only find a pleasant *Reading Room*, with lots of *foreign* periodicals, treating of *Railroads* and *Machinery*, but they will always find *good-sized* and *airy* rooms—*clean beds*—and a *well supplied* table. If they would have further proof of this, they have only to call, and judge for themselves, and much oblige the proprietor, D. K. MINOR.



ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

No 23 Pear street, near Third, below Walnut, Philadelphia.
1y10

LAP—WELDED

WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM 1 1-4 TO 6 INCHES DIAMETER,
and
ANY LENGTH, NOT EXCEEDING 17 FEET.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France, and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,
Patentee.
1y25 28 Platt street, New York.

RAILROAD IRON.

MOUNT SAVAGE IRON WORKS

THIS Company are prepared to execute orders for RAILROAD IRON, of any pattern, and equa in point of quality to any other manufactured.

Address J. M. HOWE,
Pres't. Mt. Savage Iron Works,
Dec. 25, 1y* Maryland.

ENGINEERS and MACHINISTS.

THOMAS PROSSER, 28 Platt St. N. Y. (*See Adv.*)
J. F. WINSLOW, Albany Iron and Nail Works Troy, N. Y. (*See Adv.*)
TROY IRON AND NAIL FACTORY, H. Burden, Agent. (*See Adv.*)
ROGERS, KETCHUM & GROSVENOR, Patterson, N. J. (*See Adv.*)
S. VAIL, Speedwell Iron Works, near Morristown, N. J. (*See Adv.*)
NORRIS, BROTHERS, Philadelphia Pa. (*See adv.*)
FRENCH & BAIRD, Philadelphia. (*See Adv.*)
NEWCASTLE MANUFACTURING COMPANY, Newcastle, Del. (*See Adv.*)
ROSS WINANS, Baltimore, Md.
CYRUS ALGER & Co., South Boston Iron Co.
SETH ADAMS, Engineer, South Boston.
STILLMAN, ALLEN & Co., N. Y.
JAS. P. ALLAIRE, N. Y.
PHŒNIX FOUNDRY, N. Y.
ANDREW MENEELY, West Troy.
JOHN F. STARR, Philadelphia, Pa.
MERRICK & TOWNE, do.
HINCKLEY & DRURY, Boston.
C. C. ALGER, Stockbridge Iron Works Stockbridge, Mass.